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## PNEUMOCONIOSIS AND INFECTION

### Chairman's Address

O. A. SANDER, M.D.
Milwaukee

The relationship of pneumoconiosis and lung infection has been the subject of much study and investigation in the past twenty-five years. Although most of these studies have concerned themselves with silicosis and tuberculosis, other pneumoconioses and other lung infections have been scrutinized more recently as to their possible relationship but with no relationship observed. I shall therefore limit this discussion largely to the silicosis-tuberculosis combination.

Nontuberculous infections, particularly the pneumonias, have been shown by numerous clinical studies and animal investigations to be no more prevalent with any of the pneumoconioses than in the population generally. Even when the patient has definite silicosis, increasing data suggest that it does not cause an increased susceptibility to pneumonia or other nontuberculous infection.[1] Moreover, the benign pneumoconioses, such as the siderosis of welders and grinders, have in my experience not been responsible for more pulmonary infections of any kind, including tuberculosis.[2] A tuberculous infiltrate has been observed to heal spontaneously in the presence of a welder's siderosis, and tuberculous animals have not shown the development of progressive tuberculosis after exposure to welding fumes.[3] It can be stated with some assurance that silicosis seems to be the only one of the pneumoconioses causing an increased prevalence of tuberculosis, and tuberculosis seems to be the only infection which silicosis affects adversely.

There exist some differences of opinion regarding the true nature of the relationship of silicosis and tuberculosis. At one extreme are those who believe that the coexistence of silicosis and tuberculosis in the same lung is entirely coincidental and that the growth of the tubercle bacillus is not stimulated by silicotic tissue.[4] At the other extreme are those who believe that every silicotic nodule is a silicotic tubercle and that silicosis cannot develop in the absence of tuberculosis.[5] There appears to be ample evidence both clinically and experimentally to refute both these points of view. The experimental evidence I shall not point out in detail except to give the references to some of this material.[6] It is my purpose in this discussion to show from clinical case records that the deleterious effect of silicosis seems to be largely on preexisting tuberculous foci and relatively infrequently as a predisposing factor to new tuberculosis.

In an original survey of over 15,000 workers in dusty trades,[7] largely from foundry and granite industries, ten times as much active tuberculosis was found among those with silicosis (3 per cent of the silicotic persons) as among those not having silicosis (0.3 per cent). There was an additional group of 19 per cent of those with silicosis who had confluent shadows demonstrated roentgenologically in whom tubercle bacilli could not be demonstrated in the sputum at the original examination; there were over 400 patients in this group. Many of them have been studied periodically over the past fifteen years and a considerable number of clinically active cases of tuberculosis have developed in this group. It was impossible for the purpose of this paper to summarize these cases statistically. Therefore 7 case records have been selected for careful scrutiny, because each represents a slightly different type of combined lesion.

#### REPORT OF CASES

CASES 1 and 2 (fig. 1).—Cases 1 and 2 are presented simultaneously because the dust exposure of the 2 patients was exactly the same, entirely comparable to 2 animals in the same dusting chamber. Both persons came to this country together from Italy in 1908 and started work in the same steel foundry as sand chippers with pneumatic hammers. When first examined by roentgen ray in January 1934, after twenty-six years of exposure to dust, the first patient (case 1) had well developed second stage silicosis without evidence of tuberculosis; and the second patient (case 2) in October 1933 had a comparable degree of silicosis and in addition had mottled shadows in the upper lobe of the right lung suggestive of tuberculosis. However, repeated sputum studies did not reveal tubercle bacilli. Both patients were equipped with approved filter respirators and moved to chipping jobs on previously sand-blasted castings; in other words, their exposures to dust were decidedly reduced. They were examined and had roentgenograms made at frequent intervals during the next twelve years (fig. 2). In case 1 the disease progressed little during this interval, but in case 2 there developed a massive conglomerate silicosis in both

Read before the Section on Preventive and Industrial Medicine and Public Health at the Ninety-Eighth Annual Session of the American Medical Association, Atlantic City, N. J., June 9, 1949.

1. Vorwald, A. J.; Delahant, A. B., and Dworski, M.: Silicosis and Type III Pneumococcus Pneumonia: An Experimental Study, J. Indust. Hyg. & Toxicol. **22**: 64-78, 1940. Pierpont, D. C.: Is Acute Lobar Pneumonia a Complication of Silicosis? ibid. **24**: 238, 1942. Gardner, L. U.: Discussion of Pneumonia in Silicotics, Saranac Lake, New York, Trudeau Publishing Company, Fourth Saranac Laboratory Symposium on Silicosis, 1939, p. 217.

2. Sander, O. A.: The Respiratory Hazards of Electric Arc Welding, New York, National Tuberculosis Association, 1945, p. 61; Benign Pneumoconiosis Due to Metal Fumes and Dusts, Am. J. Roentgenol. **58**: 277, 1947.

3. Gardner, L. U., and McCrum, D. S.: Effects of Welding Fumes on Normal and Tuberculous Animals, J. Indust. Hyg. & Toxicol. **27**: 173, 1942.

4. Auerbach, O., and Stemmerman, M.: Silico-Tuberculosis, Am. Rev. Tuberc. **49**: 115, 1944.

5. Policard, A.: Pathogenesis of Pulmonary Silicosis: Mode of Formation of Silicotic Nodule, Presse méd. **41**: 88, 1933.

6. Vorwald, A. J., and Delahant, A. B.: Influence of Silica on Natural and Acquired Resistance to the Tubercle Bacillus, Am. Rev. Tuberc. **38**: 347, 1938. Gardner, L. U.: Silicosis and Related Conditions, J. Indust. Hyg. & Toxicol. **19**: 111, 1937. Brumfiel, D. M., and Gardner, L. U.: Silico-Tuberculosis, Am. Rev. Tuberc. **36**: 757, 1937. Gardner, L. U.: Inhaled Silica and Its Effects on Normal and Tuberculous Lungs, J. A. M. A. **103**: 743 (Sept. 8) 1934. Kettle, E. H.: The Interstitial Reactions Caused by Various Dusts and Their Influence on Tuberculous Infections, J. Path. Bact. **35**: 395, 1932.

7. Sander, O. A.: Tuberculosis and Its Relationship to Silicosis, Indust. Med. **7**: 399, 1938.

lungs; the patient died in December 1945 of cor pulmonale. Tubercle bacilli never were recovered from his sputum or gastric contents after repeated tests. Reaction to the tuberculin Mantoux tests in both cases was positive. The rarefied shadows on the roentgenogram in case 2 are not cavities but emphysematous areas. Postmortem examination, unfortunately, was not permitted. I feel strongly, however, that tuberculosis was the factor which was responsible for the massive fibrosis in this

Fig. 1.—Comparison of roentgenograms of the chest of two subjects with silicosis after identical dust exposure: *A*, case 1, January 1934; *B*, case 2, October 1933.

case, the fibrosis from the developing silicosis fortifying the fibrosis from the tuberculous infection to such a degree that tuberculous areas of caseation and cavitation never had an opportunity to develop. I know of no other explanation for the massive fibrosis in case 2 as opposed to the process in case 1, which always remained typically nodular. As a matter of fact, the vast majority of uncomplicated cases of nodular silicosis have remained so with fifteen years of observation, and only in relatively few has a superimposed tuberculosis developed.

Case 3 (fig. 3).—A man whose present age is 60 has been a molder in iron foundries for thirty years. He had borderline first stage silicosis and a healed tuberculous scar at the apex of the right lung in 1935. By 1942 there had been a slight increase in the silicosis, accumulated especially around the tuberculous scar. There was increase in the silicosis by 1944 (fig. 4). In addition he had bronchopneumonia in the lower lobe of the right lung in October 1944, which resolved promptly. In my experience, resolution of pneumonia is not more delayed in workers with silicosis than in other workers. However he was removed from the foundry after this illness and given a job as helper in the carpenter shop. By 1947 (fig. 5) there was further increase in nodulation, despite no further exposure to dust, and increased density and spread of upper lobe lesions

Fig. 2.—Variation in progress of disease in case 1 (*A*) February 1946 (little progress) and case 2 (*B*) November 1945 (massive conglomerate silicosis).

without cavitation. Further changes have not occurred in the past two years. Sputum or gastric culture was always sterile, and the sedimentation rate was always normal except during pneumonia. The patient has no symptoms and is working daily on a nondusty job.

This case is typical of silicosis which results in excessive fibrosis around apparently healed tuberculous foci. Such fibrosis never is as dense as when the tuberculosis also is laying down fibrous tissue. In this case, as in many, it cannot be stated positively that the tuberculous foci are healed and never will reactivate. That is the classification given this case, however, because of lack of appreciable progression of the disease in fourteen years and because of persistently normal blood sedimentation rates.

Case 4 (fig. 6).—A man whose present age is 60 had been a chipper for fifteen years in a steel foundry when he was first examined in 1933. He already had second degree silicosis and conglomerate shadows in the upper lobes of his lungs. He was equipped with a respirator and moved to a cleaner job. Increase in nodulation and conglomerate shadows was observed roentgenologically by 1939. All sputum cultures were sterile, and the blood sedimentation rate was normal. By 1945 (fig. 7) he had a pronounced increase in nodulation and in conglomerate shadows of the upper lobes of the lungs. Since 1942 he has had a rapid blood sedimentation rate. Sputum and gastric cultures are always sterile. He was removed from the foundry altogether in 1945, and he stopped work entirely in 1946 because

Fig. 3 (case 3).—Borderline first stage silicosis and a healed tuberculous scar at apex of the right lung (*A*, May 1935); slight increase in silicosis, especially around tuberculous scar (*B*, April 1942).

Fig. 4 (case 3).—Increase in silicosis (*A*) by Oct. 11, 1944, and bronchopneumonia (*B*) in the lower lobe of the right lung, Oct. 23, 1944.

of dyspnea, weakness and cough. He has been receiving compensation for total disability since then. A further increase of conglomerate shadows was evident in the roentgenogram by 1949, but without evidence of cavity. The sedimentation rate is rapid, but he still has sterile sputum and gastric cultures. Sanatorium care is not recommended.

This case has been classified as a typical silicotuberculosis which is progressive and most likely pathologically active. A sputum or gastric culture exhibiting growth of tubercle bacilli may be expected at any time in the future. The shift from a normal to an increased sedimentation rate has been a significant sign of pathologic activity of such a silicotuberculous process in my experience. However, because of the dense fibrotic barrier, tubercle bacilli may not be liberated in the bronchial tree for many more years. The vast majority of combined lesions which have been observed have been of this slowly progressive type.

Case 5 (fig. 8).—A man whose present age is 44 had been a chipper in steel foundries for sixteen years when seen in 1938 with first degree nodular silicosis but no evidence of tuberculosis. He was shifted to a less dusty part of the plant and equipped with a filter respirator. Roentgen examination

disclosed an infiltrate in the lower lobe of the right lung in 1945, and sputum tests revealed tubercle bacilli. The patient was in a sanatorium nineteen months; the sputum became sterile after cauterization of a tuberculous bronchial ulcer. The man returned to work in December 1947 (fig. 9); all evidence of tuberculosis in the lower lobe of the right lung had disappeared. He was given an entirely nondusty job in the warehouse. A recent roentgenogram is suggestive of a new tuberculous lesion in the upper lobe of the left lung. Sputum examinations do not disclose tubercle bacilli, but the blood sedimentation rate has been rapid since 1945 and no improvement is evident now.

This type of case is in the minority, and the data suggest that the tuberculous lesion in the right lung developed as a superimposed reinfection. It is possible that a chronic silicotuberculosis is now developing in the left lung, which will be observed at frequent intervals in the next five to ten years. In the meantime, the man will continue to work at his nondusty job in the warehouse.

Fig. 5 (case 3).—Further increase in nodulation (*A*, August 1947); no further changes (*B*) in May 1949.

Fig. 6 (case 4).—Second degree silicosis and conglomerate shadows in the upper lobes of the lungs (*A*, March 1933); increase in nodulation and conglomerate shadows (*B*, September 1939).

Case 6 (fig. 10).—A man aged 64 at present, had been a crane operator in a steel foundry over thirty-eight years. He had first degree nodular silicosis in 1936, with a tuberculous lesion probably caused by reinfection in the upper lobe of the right lung; the lesion showed no evidence of clinical activity at that time (normal blood sedimentation rate and sterile sputum). By 1943 the process had increased to second degree nodular silicosis, and roentgenograms showed a spread of infection in the upper lobes of both lungs (now rapid blood sedimentation rate, but still sterile sputum and gastric cultures after repeated tests). By October 1946 there was a decided increase in infection shadows in the left lung, with cavities. The sputum culture was now positive for growth of tubercle bacilli. The man was in a sanatorium for the next two years (fig. 11). The sputum became sterile, and the cavity on the left disappeared after routine sanatorium care. The blood sedimentation rate was still exceedingly rapid. The man returned to work in April 1949; he was placed in a nondusty department on a light job.

This case still is classified as pathologically active silicotuberculosis in spite of the sputum conversion, and further progression of the conglomerate fibrosis in both lungs is expected in the next few years. In a number of such cases, the patients have received streptomycin in the course of their sanatorium treatment, without more encouraging results than those obtained in case 6. As with chronic fibroid tuberculosis in the absence of silicosis, the infection seems to be held in abeyance only during the course of the streptomycin treatment. It does not appear at this time that streptomycin therapy or

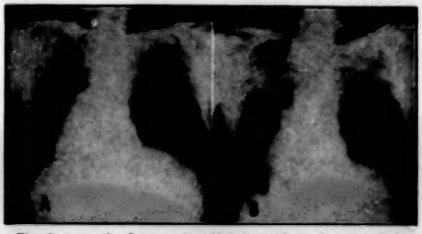

Fig. 7 (case 4).—Increase in nodulation and conglomerate shadows (*A*, April 6, 1945); further increase in shadows but no evidence of cavity (*B*, Jan. 4, 1949).

routine sanatorium care has much to offer in helping to arrest a slowly progressive silicotuberculous process.

Case 7 (fig. 12).—A man who was aged 61 at the time of his death in 1940 had been a molder for thirty-three years. Roentgen examination revealed borderline nodular silicosis in August 1940 and indefinite mottled shadows in the upper lobes of the lungs. The blood sedimentation rate was slightly increased. One concentrated sputum smear did not exhibit growth of tubercle bacilli. In October 1940, acute respiratory symptoms developed and acute miliary tuberculosis was found in both lungs. The sputum contained tubercle bacilli. The man died five days after the roentgenogram was made (October 15). Postmortem study showed widespread miliary tuberculosis not only in the lungs but in the liver and spleen. The only caseating focus from which these large numbers of bacilli could have spread was found in a tracheobronchial lymph node at the root of the right lung. These nodes also were silicotic, making the relationship undeniable. The amount of nodular silicosis in the lung itself was slight and had nothing whatever to do with the spread of the tuberculosis.

I have seen only 1 other case with such blood stream and bronchogenic spread from a silicotuberculous lymph node. It seems surprising that spread does not occur oftener, because

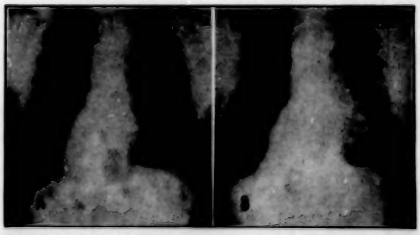

Fig. 8 (case 5).—First degree nodular silicosis (*A*) in June 1938; infiltrate in the lower lobe of the right lung (*B*) in October 1945.

both silicosis and tuberculosis develop first in these nodes and may develop side by side. Its rarity suggests that tuberculous foci in the lymph nodes at the root of the lungs have become sterile in most cases by the time silicosis develops in adult life, bearing out the observations of Feldman and Baggenstoss[8] that viable tubercle bacilli are found only rarely in the calcified root nodes of adults.

8. Feldman, W. H., and Baggenstoss, A. H.: The Residual Infectivity of the Primary Complex of Tuberculosis, Am. J. Path. 14:473, 1938.

## COMMENT

Unfortunately, too few of the most interesting silicotuberculosis cases have had postmortem study to be of statistical value. It can be stated, however, that the majority of the posted cases in which the disease was diagnosed during the life of the patient as silicotuberculosis did show some evidence of tuberculous tissue on postmortem study. In such cases there was usually a

Fig. 9 (case 5).—Healed right lung (*A*) Dec. 4, 1947; suggestion of new tuberculous lesion (*B*) in the upper lobe of the left lung May 17, 1949.

rapid blood sedimentation rate for many years before death and progressive changes were observed on serial roentgen study over a twelve to fifteen year period.

In spite of this apparently close relationship between silicosis and tuberculosis, only a small percentage of workers with silicosis actually are dying of tuberculosis today. Actual figures cannot be given from the group which I have studied, but it is more in the range of 5 to 10 per cent instead of the often quoted 75 per cent, and the majority of those cases were of long-standing combined lesions. Superimposed tuberculosis on a previously uninfected silicotic lung still occurs occasionally but is becoming increasingly rare. There is far less fear that uninfected silicotic workers will contract tuberculosis today than there was in the past. They are carrying on full time work without impairment. Such a program necessitates prevention of contact exposure with persons who have active tuberculosis within the

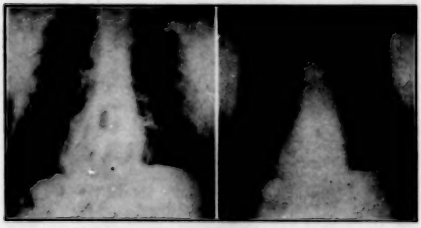

Fig. 10 (case 6).—First degree nodular silicosis (*A*, May 21, 1936); second degree nodular silicosis (*B*, Aug. 25, 1943).

plant and in the home, including periodic examinations of all fellow workers as well as those with silicosis. Persons with silicosis are being educated in the protection of their health and are being reassured that chances of the development of superimposed tuberculosis are remote. Such reassurance is considered a major factor in the mental well-being and continued productivity of such workers.

## SUMMARY

Several important conclusions regarding pneumoconiosis and infection are drawn from the clinical observation of these cases.

1. Pulmonary tuberculosis is the only infection which appears to be more prevalent in persons with silicosis than in other workers.

2. The effect of the silicosis is primarily on preexisting tuberculous foci. If these are pathologically active, the silicosis tends to keep them active and to prevent healing, resulting in later slow spread of the combined lesion.

3. Such lesions usually are more chronic than is tuberculosis alone, and they slowly progress with excessive overgrowth of fibrosis, tubercle bacilli not being liberated in the bronchial tree for many years and occasionally never.

Fig. 11 (case 6).—Increase in shadows and cavities of left lung (*A*, Oct. 14, 1946); continued evidence of active silicotuberculosis (*B*, April 12, 1949).

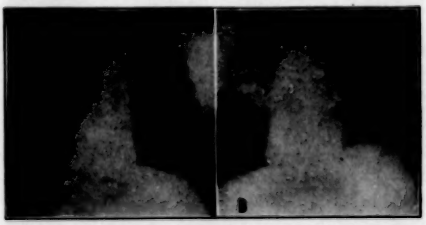

Fig. 12 (case 7).—Borderline nodular silicosis and indefinite mottled shadows in upper lobes of lungs (*A*, Aug. 17, 1940); acute miliary tuberculosis in both lungs (*B*, Oct. 15, 1940).

4. Sanatorium care not only is unnecessary but inadvisable until the sputum or gastric contents show tubercle bacilli.

5. Streptomycin appears no more effective in halting the progression of silicotuberculosis than it does in chronic tuberculosis without silicosis.

6. Persons with clinically inactive silicotuberculosis should be kept at work in nondusty atmospheres or at jobs where dust dissemination is well controlled. Such work, of course, should be within the limits of their physical capacity if they are partially disabled.

7. They should have frequent periodic examinations, at least every six months, including sputum and gastric cultures for tubercle bacilli.

8. The blood sedimentation rate is particularly indicative in conjunction with these periodic examinations. A significant increase in the rate which had been normal should make one suspect a developing pathologic activity of the walled-off infection.

9. The decided reduction in the past ten years of the dust exposures in the dusty trades is having a profound effect on the development rate of silicosis and silicotuberculosis, to the extent that today new cases of silicotuberculosis are no longer seen except in the older workers who were exposed to the heavier dust concentrations in the past.

10. The increasing discovery and isolation of persons with active tuberculosis in the community as well as in industry also is helping to prevent new cases of silicotuberculosis to such an extent that it soon will cease to exist as an occupational disease.

11. The pessimism of the past regarding the prognosis of silicosis should be replaced by a more optimistic outlook in the vast majority of cases, and those affected should share in that optimism.

710 North Plankinton Avenue.

## SILENT PHASE OF CANCER OF THE LUNG

RICHARD H. OVERHOLT, M.D.
and
IVAN C. SCHMIDT, M.D.
Brookline, Mass.

Fate has challenged physicians in a peculiar way with respect to primary cancer of the lung. The problem is magnified by an astounding increase in numbers, yet it is simplified by facilities for early detection. In fact, of all internal cancers, those originating in the lung should be the most readily discovered while still locally confined. The lesions not only can be found but can be properly labeled. Excision of the cancer-bearing lung has been shown to be feasible, relatively safe and effective. Therefore physicians have the tools with which to find, label and successfully treat cancer in this location.

### EXTENT OF PROGRESS

Cure of cancer of the lung was never seriously considered prior to 1933, when total excision of the lung was shown to be possible. During subsequent years, correlated studies of symptoms, roentgenographic shadows, bronchoscopic observations, cellular elements of sputum and surgically detected pathologic conditions have been made. Much is now known as to the life history, direction of spread and variabilities of the several histologic types of cancer of the lung. Sufficient time has elapsed to find from the literature a mounting list of recorded five year cures. It has been shown that cure rates are high if the patients submit to pneumonectomy at a time when there is no demonstrable growth outside the lung. We recently reported [1] that in the early phase of thoracic surgery (1933 to 1943) 40 per cent of such patients lived five years or more (table 1). Nor is this all—those patients who were saved by pneumonectomy have been able to enjoy life and have taken a productive position in society.

Although there have been some brilliant cures, thoracic surgeons are distressed to learn from a study of their own statistics that only a small percentage of the patients coming to them for benefit can be helped. In our own experience, of a total of 721 patients, only 9 per cent presented themselves for treatment when the growth was still confined to the lung (table 2). It is perfectly clear that even if the risk of surgical treatment is reduced to zero, it will be impossible to show any significant change in cure rate until something is done to substantially raise the percentages of patients with locally confined cancers in the group presented for consideration of pulmonary resection.

### THE TIME ELEMENT IN DIAGNOSIS

Since cancers are growths, all extensive lesions were at one time small and localized. The presence of the growth factor presupposes a time factor. To eliminate all delay in the discovery of any cancer is, of course, essential. The average patient waits three months after the onset of symptoms before seeking advice. The record then shows that, by the orthodox methods physicians use to sort out patients with cancer of the lung from those with other conditions, there is another seven months' delay. The loss of ten months after onset of symptoms, which is the rule now, is only slightly less than that which existed in an earlier period (1932-1940), when the average delay was 11¾ months.

TABLE 1.—*Primary Carcinoma of the Lung, 1932 to 1943*

| | | | |
|---|---|---|---|
| Total Cases | | | 234 |
| Verified | | | 190 |
| Unverified | | | 44 |
| | | Operative Mortality | |
| | | No. | % |
| Explored | 58 | 9 | 15.5 |
| Resected | 41 | 9 | 21.9 |
| Total thoracotomies | 99 | 18 | 18.1 |
| | | Five Year Survival | |
| Resections | | | |
| Without extrapulmonary extension | | 20 | 8 \| * |
| Lymph node extension only | | 10 | 7 \| |
| Gross extension | | 11 | 0 |

* 4.3 per cent of all cases seen; 5.3 per cent of all verified cases.

Why has the time schedule been so prolonged? There are four principal reasons:

1. The first and only symptom is usually nothing more than cough. This is hardly a warning, because cough is such a part of the life of every one.

2. The stethoscope is unreliable because abnormal physical signs are either nonexistent or the same as those encountered with any common chest ailment.

3. Secondary infection is frequent during the symptom phase and becomes a "red herring" leading to misdiagnosis and misdirected treatment, usually for recurring colds, chronic bronchitis or virus pneumonia.

4. Abnormal areas of density as found in the conventional roentgenogram of the chest are extremely variable because of bronchial occlusion of the segmental or subsegmental bronchi (fig. 1). The anatomic arrangement of the pulmonary segments permits a wide range of possible shadows, depending on the relative position and superimposition of the aerated to unaerated segments.

Since the orthodox method of case finding depends on a lesion extensive enough to produce symptoms, and since the signs are so variable and confusing, it is obvious that delays in definitive treatment are bound to occur. The same situation developed in regard to case findings in tuberculosis. By depending on a warning symptom, visits to the physician, therapeutic trials and eventually the true diagnosis, the disease in about

Fellow in Thoracic Surgery, Tufts College Medical School (Dr. Schmidt).

Read before the Section on Diseases of the Chest at the Ninety-Eighth Annual Session of the American Medical Association, Atlantic City, N. J., June 9, 1949.

From the Department of Surgery, Tufts College Medical School, and member of the Staff, New England Deaconess and New England Center Hospitals, Boston (Dr. Overholt).

1. Overholt, R. H., and Schmidt, I. C.: Survival in Primary Carcinoma of the Lung, New England J. Med. 240: 491-497 (March 31) 1949.

85 per cent of all persons with tuberculosis had progressed to advanced stages. Case finding of the presymptomatic or silent lesion by the mass survey method has reversed the ratio of minimal to advanced cases, and a yield of 85 per cent of minimal cases are discovered.

### DETECTABILITY OF CANCER OF THE LUNG

Cancer of the lung has a silent phase and is detectable. The air within the expanded lung provides a natural, ever present contrast medium for the detection of changes in density. Small tumors growing in the periphery will cast a direct shadow. Smaller tumors centrally located cause a subsegmental or segmental bronchial obstruction, which will cast a shadow of the corresponding atelectatic segment (fig. 2). An airless segment will cast a shadow many times the size of the shadow of the tumor itself; thus there is actual magnification of centrally placed lesions which represent the great majority of all pulmonary cancer. This is fortunate, as small tumors within the pulmonary hilus might otherwise escape detection because of the grouping of normal bronchial and vascular shadows in this area.

TABLE 2.—*Primary Carcinoma of the Lung from 1932 to September 1949*

| | |
|---|---|
| Total Cases * | 721 |
| Verified | 569 |
| Unverified | 152 |
| Exploratory operation only | 142 |
| Resections | 580† |

* Does not include 34 patients treated by resection for tumors diagnosed as bronchial adenoma, infiltrative bronchial adenoma or malignant adenoma.

† Of these patients, 191 had symptoms, and the mortality within 60 days of operation was 19 per cent. Nine of these patients were symptom-free and the lesions were discovered in surveys. The operative mortality was zero.

The case-finding program in tuberculosis is already beginning to perform a double service, as the incidental finding of silent cancer has shown. Patients with suspicious abnormal areas of density apparent in a survey film have been observed; on exploratory operation these densities sometimes prove to be cancer. In the Minneapolis Survey [2] satisfactory examinations were made in 301,513 persons (May to August 1947), and in 2,152 cases abnormal shadows were detected that were not explained on the basis of tuberculosis. Data on the follow-up of these cases is incomplete, for only 65 per cent were reported back to the health department. However, Gunlaugson [3] has stated that studies have to date been made in 1,108 instances and the following tumors have been discovered: primary cancer 6 cases, secondary cancer 9 and not stated 12; Hodgkin's disease 4 cases, and nonmalignant intrathoracic tumors 19, a total of 50 cases. It has been concluded from the Minneapolis experience, according to Hilbish,[4] that 10 primary cancers of the lung for every 100,000 persons examined will be close to the probable yield.

From Seattle, Spielholz [5] has reported that of 400,000 survey roentgenograms, 261 of the confirmatory 14 by 17 inch (36 by 43 cm.) roentgenograms were interpreted as indicative of possible neoplasm. Follow-up is at present incomplete, but adequate information in 107 instances has shown the following yield: primary carcinoma 8; metastatic carcinoma 13; other primary malignant thoracic growths 1; benign tumor 6; malignant lymphoma 7; thyroid 9; nonneoplastic 43, and growths requiring continued observation 20.

Hilleboe [6] has reported that during 1938 the Division of Tuberculosis Control in a program in Upstate New York found in 75,774 survey roentgenograms 910 significant nontuberculous lesions; of these, 39 were interpreted as being due to tumor.

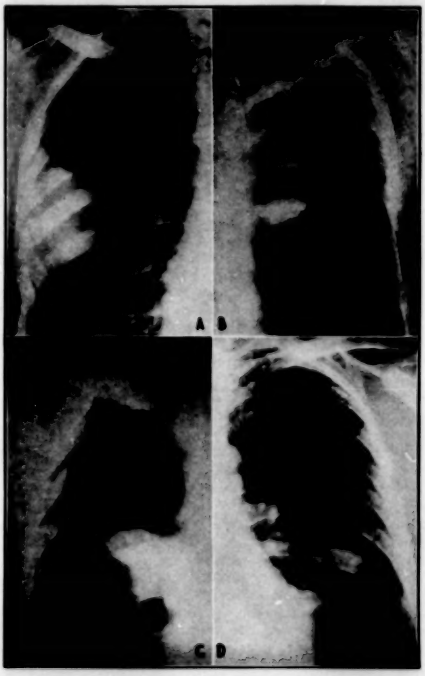


*Fig. 1.*—Variability of shadows produced by cancer: *A*, an epidermoid carcinoma, grade 3, which had invaded the chest wall of G. B., a man aged 50. Resection of the lung and a wide area of chest wall was performed July 26, 1944. The patient is now well. He contracted tuberculosis in 1921 and had been under observation since that time. Review of serial roentgenograms revealed that first evidence of the shadow was apparent nine years prior to surgical treatment. *B*, silent lesion discovered in survey in McM., a man aged 56. Exploratory operation revealed a small localized cancer in the posteroapical segmental bronchus with atelectasis of the segment. A pneumonectomy was performed Dec. 30, 1948. *C*, lesion discovered during gastrointestinal fluoroscopic examination of C. G., a man aged 67. Exploratory operation revealed cancer of the anterior segmental bronchus, and the lung was successfully removed May 21, 1948. *D*, lesion discovered in routine roentgenogram of T. N., a man aged 45. One year previously he had extensive abscess in the upper lobe of the right lung, which required lobectomy. The shadow in the left lung was discovered when he returned for annual check-up. It proved to be an epidermoid grade 2 carcinoma and was locally confined to the posterior basal segment. The resection performed Dec. 16, 1948 was limited to the lower lobe, since the patient had lost the contralateral upper lobe a year previously.

Hilbish [4] stated in the Washington, D. C. survey program that of 350,000 satisfactory examinations, 373

2. Report of Minneapolis X-Ray Survey Committee, 1947, pp. 36 and 39.

3. Gunlaugson, F. G.: Personal communication to the authors, April 29, 1949.

4. Hilbish, T. F.: Personal communication to the authors, April 18, 1949.

5. Spielholz, J. B.: Communication to John E. Dunn Jr., United States Public Health Service, Feb. 15, 1949.

6. Hilleboe, H. E.: Personal communication to the authors, April 22, 1949.

were considered suggestive of tumor; 38 of the 373 have so far been proved to be malignant.

Although the incidental discovery of cancer in tuberculosis survey programs has not produced startling figures, the follow-up of all suspect cases has been incomplete. However, another way to illustrate the value of routine roentgen screening of the chest is to look backward from records of a treatment center. For example, at the Memorial Hospital in New York Watson [7] has reported that between 1940 and 1948, 104 silent tumors were referred for treatment and, of these, 41 proved to be malignant and 63 benign. In our own practice, 65 asymptomatic patients in whom a diagnosis of tumor was made have been referred for treatment. Of these, 19 growths were found to be malignant and 35 benign; in 10 instances the diagnosis remained undetermined histologically. The resectability rate in the malignant group was 79 per cent. Roentgenograms of 4 patients are shown in figures 3 to 6.

### THE LENGTH OF THE SILENT PHASE

Rates of cancer growth vary, but there are isolated instances in which the existence of abnormal shadows was apparent for several years and yet on surgical exploration the lesion was found to be apparently localized. For example, in 1934 G. B. was found to have an abnormal area of density which persisted for nine years. When an exploratory operation was performed in 1943, a resectable cancer was found. He is living and well today. In another case, E. B., a man aged 64, had a silent shadow which was observed for seven years, and a localized cancer was found on surgical exploration (fig. 5). Exploratory operations in cases of silent lesions also have been known to reveal extensive metastases. This in no way mitigates the value of screening unless recent roentgenograms which antedated the discovery of the silent lesion were normal. If the survey roentgenogram represents the first and only roentgenogram the patient ever had taken, who will deny that, if the person had been having annual examinations previously, cancer in an operable stage probably could have been discovered (fig. 6). It is impossible to say how often patients should be screened in order to give reasonable protection from cancer of the lung. As further experience develops, this point can be determined. For the present, selective screening on an annual basis would seem to be wise. The highest yield will be among men over 45 years of age.

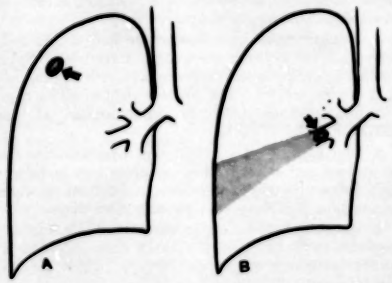


Fig. 2.—The basis for asserting that a survey roentgenogram will show silent cancer: *A*, in the periphery a small tumor casts a direct shadow in contrast to rarefied lung field; *B*, in stem bronchus a small tumor casts a shadow of segmental or subsegmental atelectasis. This shadow is therefore indirect, yet it greatly magnifies the actual size of the tumor.

Fig. 3.—Case illustrating delay of nine months, yet cancer still was localized: Roentgenogram of B. W., a man aged 64, taken (*A*) May 28, 1948 and (*B*) Feb. 3, 1949. Chronic cough was the only symptom. He was treated for virus pneumonia in January 1949. Bronchoscopy and sputum tests revealed normal conditions. An exploratory operation revealed cancer of the anterior segmental bronchus. Pneumonectomy was successfully performed March 5, 1949.

Fig. 4.—Case illustrating observation of two years, yet cancer was still localized in D. H., a man aged 60: *A*, left apex of lung from roentgenogram made April 9, 1947 in a routine hospital survey when the patient was in for treatment of sinus. Serial roentgenograms for two years revealed gradual enlargement of the shadow (*B*, Feb. 16, 1949), but the man remained symptom free. At operation, April 23, 1949, a localized cancer of the left posteroapical segment was found and successfully removed by pneumonectomy.

### NEED FOR PROPER LABELING

Screening the whole population and spotting abnormal pulmonary densities is the first step. Prompt and adequate investigation of suspects is equally important.

7. Watson, W. L.: Personal communication to the authors, March 10, 1949.

Additional information can be obtained by: (1) positional, stereoscopic, tomographic roentgenologic studies; (2) cytologic examination of sputum; (3) bronchoscopy, and (4) exploratory thoracotomy. Negative sputum or negative bronchoscopic examination does not prove the nonexistence of cancer. If the abnormal

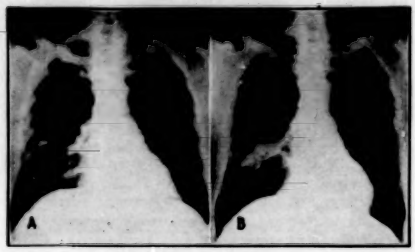


Fig. 5.—Case illustrating observation of survey lesion for seven years. Hospital survey roentgenogram (*A*) was taken March 22, 1941, when the patient was under treatment for multiple thrombosis of the leg. Serial films over a period of seven years revealed little change in the shadow (*B*, April 9, 1948). Bronchoscopy was negative. An exploratory operation revealed localized cancer of the lower lobe of the right lung, and resection was successfully performed May 12, 1948.

roentgenologic density cannot be explained with reasonable certainty on any other basis, surgical exploration should be advised. Fortunately, today this can be done with safety. With the chest open [8] and the lung under direct inspection and palpation, the lesion which caused the abnormal shadow can be readily located.

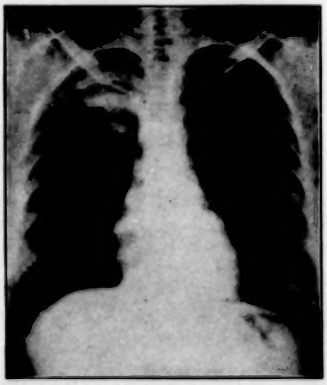

Fig. 6.—Case illustrating survey lesion found in asymptomatic patient C. B., a woman aged 56, in January 1948. Treatment was prompt, but the cancer had already invaded the mediastinum. Only a palliative resection could be performed (Jan. 29, 1948). This was the only roentgenogram the patient ever had. It is probable that a survey film one, two or three years previously would have detected the lesion when it was still growing locally.

Lesions near the surface and many in the hilar area can be directly biopsied. If the lesion is located centrally, within a segment or subsegment, and direct biopsy is considered not to be technically easy, then the segment or subsegment bearing the mass should be removed. The ability to utilize any one of the eighteen segments, certain subsegments, or combinations of both as units of excision permits maximum conservation of lung until the diagnosis of cancer is established histologically. If the identity of the lesion was known prior to the exploratory operation (positive bronchoscopic biopsy or smear of bronchial secretions), or the diagnosis has been established at surgical exploration, the surgeon proceeds with total resection of the lung and unilateral dissection of the mediastinal lymph nodes. In rare instances in elderly patients with low reserve or when previous disease has destroyed part of the contralateral lung, it may be necessary to limit the excision to a lobe or segment. However, the best cancer operation, here as elsewhere, is one which follows the principle of the widest possible excision of the cancer-bearing organ with all the regional lymphatic vessels.

8. Problems which confront the surgeon on exploration and technical matters pertaining to segmental resection have recently been presented by Overholt, R. H., and Langer, L.: The Technique of Pulmonary Resection, Springfield, Ill., Charles C Thomas, Publisher, 1949.

## CONCLUSIONS

1. Orthodox methods of case finding based on symptoms, visits to the physician and the time interval usually employed for serial roentgenograms and differential diagnostic maneuvers have produced a low yield of localized pulmonary cancers.

2. A silent phase of cancer of the lung exists and is detectable by periodic radiologic screening. Survey methods developed for tuberculosis case-finding may do a double service. The highest yield of silent cancer will be found in the male population of 45 years and over.

3. The labeling of survey-found abnormalities must be prompt and exact. Although time lags in tuberculosis follow-up may not prove to be fatal, if cancer occurs time lags may cost patients their lives.

4. Surgical exploration in cases in which cancer is suspected will establish the exact diagnosis and will permit immediate excisional therapy, which for most will be curative.

1101 Beacon Street.

## ABSTRACT OF DISCUSSION

Dr. John E. Dunn Jr., Washington, D. C.: Before the feasibility of the mass chest roentgenogram survey technic for case finding in cancer of the lung is considered, an important difference between the problems of tuberculosis and cancer should be noted. In tuberculosis a single case-finding survey of a population, theoretically at least, can be expected to have a definite and sustained effect on the extent of the problem if all patients with infectious and incipient tuberculosis are given proper treatment, thereby removing potential and actual sources of secondary infections. A similar survey of a population for pulmonary cancer has no lasting value of this kind, since in the course of a few months the problem has recurred to its original extent. In other words, any cancer case-finding method must be a repetitive procedure for the population considered to be at risk. The response to mass surveys for tuberculosis is best in the younger portion of the adult population, while in the older age groups, in which cancer of the lung is most prevalent, somewhere between three fourths and a half will be included, depending on the age group. In a community of 100,000 persons the best data on the incidence of pulmonary cancer leads one to expect an annual incidence of 7 or 8 cases. If interest were confined to screening for cancer of the lung the survey would probably be limited to persons over 35 or 40 years of age, since this segment of the population

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will have most of the pulmonary cancer. This would reduce the number to be screened to about 35,000 instead of 100,000 persons. It has been found in tuberculosis surveys that the cost for mass roentgenologic screening of chests is about 65 cents per person, including large roentgenograms in cases in which pulmonary cancer is suspected. The cost of the roentgenologic portion of such a survey for cancer of the lung would be in the neighborhood of $23,000. To this would need to be added the cost of ancillary diagnostic procedures such as bronchoscopy and cytologic examinations in order to make a definitive diagnosis in certain cases. The purpose of this type of survey would be to recognize cancer prior to symptoms that normally would lead a patient into medical channels and eventual diagnosis. Unfortunately, information is lacking as to the time interval in the average case between earliest roentgenologic recognition and symptoms. This time interval would determine the frequency with which the screening should be repeated, and it would also determine the yield each survey would produce in new cases found. If this interval is twelve months, and a safer guess would probably be less than this, an annual survey would be required. Can the hypothetic community of 100,000 persons be induced to spend at least 25 cents per capita annually for the early recognition of its victims of cancer of the lung?

DR. OTTO C. BRANTIGAN, Baltimore: All physicians are interested in early diagnosis and treatment of cancer of the lung. Little improvement can be expected in the surgical treatment, but great strides are possible in early diagnosis, which bring about earlier treatment and correspondingly better results in the surgical treatment of carcinoma of the lung. When confronted with a patient with early carcinoma of the lung the physician might use "the silent phase" to excuse himself for missing the diagnosis. How silent the phase might be or how long the silent phase may extend often will depend on the persistence and skill of the physician in uncovering clues of its presence. If carcinoma of the lung reveals its presence by a small shadow on roentgenograms, can it be called silent? If careful cytologic studies reveal malignant cells in the sputum, can it be called silent even though no other symptoms or observations are present? Dr. Overholt has shown the importance of segmental atelectasis as a sign of early carcinoma. Dr. Rigler, and particularly Dr. Robbins, pointed out the importance of localized or segmental emphysema as a sign of early carcinoma. I would like to call attention to the importance of increased density of the hilar shadow as a presumptive diagnosis of centrally placed carcinoma of the lung. Dr. Overholt has described 2 patients who had roentgenographic evidence of carcinoma of the lung two and seven years before being subjected to surgical treatment. In both patients the growth was resectable. Such a condition is unusual and results in too much optimism. The more usual course of the disease is one of great rapidity. Dr. Overholt noted 10 tumors in which the "diagnosis was undetermined histologically." I have had that experience. I would like to ask the following question: with the chest open and a specimen taken for biopsy, microscopic examination of the frozen section leaves the diagnosis undetermined histologically; what does Dr. Overholt do for that particular lesion?

DR. LEO G. RIGLER, Minneapolis: My co-workers and I have made some observations that might answer the question Dr. Dunn raised, and that is why I take the opportunity to present them at this time. In studying a large series of cases of carcinoma of the lung which have appeared at our hospital, we tried to get the past roentgenologic history of the patient. Many persons have had a roentgenogram of their chest made at some time or other, whether in a mass survey or on entrance into a hospital; as a result, through fortuitous circumstances we have been able to collect such roentgenograms made in other hospitals and institutions through the state at varoius times prior to the time when the patient appeared with symptoms. We now have a collection of cases in which we have roentgenograms made seven years, three and a half years, two and a half years and one and a half years previously, in which there are evidences which should have directed attention to the lung—not clearcut evidences of carcinoma but evidences of disease which should have invited further investigation that would undoubtedly have disclosed the carcinoma of the lung. These evidences to which I refer are often overlooked in the interpretation of roentgenograms. One of them, referred to by the last speaker is pulmonary ephysema, either segmental, which is easily overlooked unless close attention is paid to it, or general increased radiability of one lung, which in our experience has proved to be an early sign of carcinoma of the bronchus. The second is a minor difference in the size of the root shadow of the two lungs, a thing which is often passed up casually but may be a relatively early indication of cancer. The third is bandlike or linear areas of atelectasis in the lungs. The fourth is a nodule in the periphery, which is easily seen but which, again, is too often passed up as being a tuberculoma or something of no great significance. I wish to emphasize that it is possible to demonstrate a lesion in the lung roentgenographically long before the patient has any symptoms or anything that would lead him to come to the physician for treatment of a pulmonary condition.

DR. RICHARD H. OVERHOLT, Brookline, Mass.: It was my hope that attention would be focused on the great value of tuberculosis screening as a simultaneous and automatic method for detection of cancer of the lung. Such a double campaign would also emphasize to all physicians the necessity for immediate roentgen examination and proper labeling of all patients with symptoms relating to the chest. A screening program may boomerang and physicians may bring forth criticism if the follow-up of cases with abnormal shadows is fumbled. If a patient is told that an abnormal shadow is present and if it is not labeled properly and adequate treatment instituted, it will be difficult to justify the error if he later dies of cancer of the lung. Dr. Brantigan has asked, "Is this really a silent lesion if it can be seen by roentgen ray?" Certainly it is proper to use the word "silent" for lesions that have not as yet produced symptoms. Atwell has divided cancer growth into four phases: 1. Latent: Malignant cells present, capable of growth, yet not discoverable by present means. 2. Silent: Asymptomatic, yet detectable by clinical means. 3. Urgent: The early symptomatic stage and detectable, yet little time left in which to treat successfully. 4. Rampant: Symptomatic, with obvious clinical signs and easy to diagnose—usually out of bounds so that cure is impossible. Unfortunately, in the past, the clinical picture of cancer of the lung has been that of the rampant stage, with weakness, weight loss, dyspnea, chest pain and hemoptysis. The question was raised as to the procedure of exploration in unverified cases. In many cases, it is possible to secure a biopsy specimen of the tumor or regional gland. A bronchotomy may be necessary. For an inaccessible lesion, unverified, the smallest unit bearing the lesion is removed (i. e., subsegment, segment or lobe). This is immediately examined and a frozen section made. Then, if the process is malignant, the mediastinal lymph nodes and the remainder of the lung are removed. If the lesion is benign, the surgical operation is concluded without sacrifice of healthy lung tissue and the wound is closed. In many instances, however, the exact diagnosis can be determined preoperatively. The Papanicolaou method of examination of the sputum or bronchial washings has raised the percentage of correct diagnoses considerably. I should like to emphasize again that cancer originating in the lung should be the most favorable for treatment of all internal cancers. We now have in operation a screening process which should enable us to identify many cases of cancer of the lung while the lesion is still in a curable phase and long before the patients would otherwise know they were harboring a potentially fatal disease.

# CONSERVATIVE SURGICAL MANAGEMENT FOR CERTAIN RECTAL ADENOMAS SHOWING MALIGNANT CHANGE

SAMUEL McLANAHAN, M.D.
GLENN P. GROVE, M.D.
and
RICHARD F. KIEFFER Jr., M.D.
Baltimore

Polypoid lesions of the lower portion of the colon represent one of the most active frontiers in the advancing fight which clinical surgeons are waging against malignant disease. They are of especial interest and significance for three reasons: first, the relative frequency with which they occur; second, the close relationship they bear to carcinoma of the same region, and third, the relative ease with which, in the majority

Fig. 1.—Photomicrograph of malignant rectal polyp, showing contrast between normal glandular pattern along lower margin and adenocarcinoma on upper (darker) portion.

of cases, the diagnosis can be made and treatment rendered.

The attention and thought of many of the ablest proctologists and pathologists have been directed toward numerous controversial features of this problem, with the result that there is an accumulated reservoir of information and experience which is leading to increasing agreement on principles of diagnosis and treatment. Yet there is a distinct paucity in follow-up studies on groups of patients who have had their polyps removed. This is especially true of the group with adenomatous polyps of the rectum showing malignant change, the type often referred to as "adenoma malignum." From many surgeons with whom we have discussed this problem, we learn that a given case in which malignant change has been observed in a polyp presents the necessity for an exceedingly difficult decision. A choice must be made between a relatively simple conservative surgical procedure and a radical operation for cancer. In order to learn from the background of clinical experience and in order to formulate certain criteria to guide in making such a decision, the clinical courses of a group of patients with adenomas showing malignant change have been followed and studied.

However, before presenting these observations it is advisable to emphasize certain previously recorded data and conclusions. Especially important is the disproportion between the actual incidence of colonic adenomas and the frequency with which the diagnosis is made. In a series of 7,000 consecutive autopsies at the Cook County Hospital, Lawrence [1] found an incidence of 2.3 per cent. More recently Helwig [2] has reported a rate of 9.5 per cent among 1,460 autopsies. Certainly the clinical rate of discovery is less than this and is even reduced when one considers the observation that in nearly half the cases the adenomas were multiple. Though it is difficult to trace the exact relationship between the so-called benign adenoma and frank adenocarcinoma of the colon, it is admittedly a close one. Swinton and Warren [3] reported that at least 14 per cent of 827 cases of carcinoma of the colon were true malignant adenomas, and Helwig [2] expressed his belief that the majority of carcinomas of the colon arise in preexisting adenomas. From the point of view of the fate of such adenomas, there is considerable disagreement. Some writers (Womack [4] and Fitzgibbon and Rankin [5]) have been of the opinion that a certain number of these lesions are destined for a benign course and that their benignancy can be assessed on the basis of certain gross and microscopic characteristics. Others are inclined to agree with Martin,[6] who writes: "The greatest majority, if not all, polypoid lesions of the colon and rectum, whether sessile or pedunculated, single or multiple, however small, will show definite changes from the normal whether they be anaplastic, hyperplastic or in the so-called precancerous state, and if allowed to remain in situ will become frankly malignant." More recently Helwig,[2] after a careful study, concluded that there are no histologic characteristics which will permit one to predict a benign course for any particular group of adenomas. Moreover, the frequency with which adenomas are found in colons resected for carcinoma, the similarity of locations in which these two lesions are most frequently encountered in the colon and the fact that the average age of the adenoma patient is just ten years less than that of the carcinoma patient constitute indirect evidence of a close relationship.

## PATHOLOGY

While many authors have stressed the value of palpation and visualization of a rectal adenoma in determining the presence or absence of a malignant state, we believe that the microscopic appearance of a polypoid

From the Surgical Services of the Union Memorial Hospital and the Johns Hopkins Hospital.
Read before the Section on Gastro-Enterology and Proctology at the Ninety-Eighth Annual Session of the American Medical Association, Atlantic City, N. J., June 9, 1949.

1. Lawrence, J. C.: Gastrointestinal Polyps: Statistical Study of Malignancy Incidence, Am. J. Surg. 31: 499-505 (March) 1936.
2. Helwig, E. B.: The Evolution of Adenomas of the Large Intestine and Their Relation to Carcinoma, Surg., Gynec. & Obst. 84: 36-49 (Jan.) 1947.
3. Swinton, N. W., and Warren, S.: Polyps of the Colon and Rectum and Their Relation to Malignancy, J. A. M. A. 113: 1927-1933 (Nov 22) 1939.
4. Womack, N.: Adenomas of the Rectum, S. Clin. North America 24: 1143-1150, 1944.
5. Fitzgibbon, G., and Rankin, F. W.: Polyps of the Large Intestine, Surg., Gynec. & Obst. 52: 1136-1150 (June) 1931.
6. Martin, W. J., Jr.: Polypoid Lesions of Colon and Rectum, Tr. Am. Proct. Soc. 40: 176-183, 1939.

growth is the only satisfactory means of differentiation. Furthermore, we would like to emphasize the advantage of obtaining a section of the intact polyp for histologic examination, as opposed to one or many biopsy fragments.

In the cases herein reported, the microscopic sections have all been carefully reviewed and have been found to conform with certain criteria for malignant change. The criteria follow essentially those previously laid down by Swinton and Warren and quoted by Swinton [7] in his report of 22 polyps showing early malignant change. These criteria may be listed under three headings: first, a prominence of juvenile epithelial cells with considerable variation in size and shape, with deep staining nuclei and frequent mitotic figures. Furthermore, there is a loss of polarity of the nuclei, so that they no longer aline themselves but are situated in any position from the surface of the lumen to the basement line. Second, there is a distortion of the generally regular glandular pattern of the growth. Not only is there a lack of intramural uniformity of the cells, but one finds no constant relationship with the various surrounding cells. Clumping and scattering of the epithelium is evident. Figure 1 illustrates adjacent normal and malignant areas in the same polyp. Third, invasion may have occurred; perhaps the cells displaying the individual abnormalities considered previously are growing into the pedicle or base of the growth and may actually be present in one or more layers of the bowel wall. To be classified as a malignant polyp, the growth must present at least the first and second of these groups of characteristics. All the polyps in our cases have satisfied at least these two requirements.

## CLINICAL DATA

In order to determine the efficacy of local treatment of adenomas showing malignant change (adenoma malignum), the records of the Johns Hopkins Hospital and the Union Memorial Hospital were searched for cases in which (1) patients had been treated by local surgical measures, either excision or fulguration, (2) sections had revealed definite malignant change and (3) the patients could be followed for more than one year. Thirty-eight satisfactory cases were found. Although the lesion probably is not as rare as this relatively small number would suggest, many records were discarded because the common practice of securing only a small biopsy specimen prior to destroying the lesion by fulguration rendered the cases inadequate from the pathologic standpoint. Furthermore, the study was limited to those adenomas occurring in the lower sigmoid and rectum because they have formed a special problem in diagnosis and treatment. No lesion treated primarily by laparotomy has been included.[8]

It has been possible to follow all 38 cases for at least one year, and over 70 per cent of them have been followed for more than four years. Although the generally accepted sex ratio is 3:2 with the predominance being found in the males, in this small series the ratio is exactly even. At the time of their original treatment, the patients varied in age from 26 to 76 years.

By reference to table 1, it can be seen that 28 patients, or nearly three fourths of the entire group, whose malignant polyps were removed remained cured during the period of observation. This is of great significance when one considers the pathologic criteria and the mode of removal. Most of these polyps were excised or removed by a combination of excision and fulguration of the base.

In 5 patients there developed simple recurrences, which were benign or of no higher degree of malignancy than the original lesion. Three of these 5 had more than a single recurrence. In another group of 5 patients there developed recurrences that were identified as frank adenocarcinoma; these developed either as single recurrent tumors or as multiple recurrences that eventually became malignant. Thus it is to be noted that 10 patients, or approximately one fourth of the group, had demonstrable local recurrences and that 5 of these 10, or approximately one eighth, had lesions clinically diagnosed as cancer. It is interesting that 8 of the 10 recurrences appeared within one year of the original operation and all had appeared within two years, emphasizing the need for repeated observation of the site of the polyp during the first two years.

TABLE 1.—*Tabulation of Follow-up in Terms of Simple Recurrences and Development of Frank Adenocarcinoma*

| Follow-Up, Yr. | Number of Cases | Simple Recurrences | Frank Adenocarcinoma |
|---|---|---|---|
| 1 to 3 | 10 | 0 | 2 |
| 4 to 6 | 16 | 3 | 2 |
| 7 to 9 | 7 | 0 | 1 |
| Over 10 | 5 | 2 | 0 |
| Totals | 38 | 5 | 5 |

TABLE 2.—*Recurrence in Relation to Invasive Character of Original Tumor*

| Original Tumor | Number of Cases | Simple Recurrences | Frank Adenocarcinoma |
|---|---|---|---|
| Invasive | 15 | 1 | 5 |
| Noninvasive | 23 | 4 | 0 |
| Totals | 38 | 5 | 5 |

Recurrence was also studied in the light of invasive characteristics as determined in the pathologic study of the original adenoma (table 2). The term "invasive tumor" indicates one in which the malignant development has been more than an in situ change and in which there has been progression of the malignant cells to the stalk or base of the tumor, or even into the bowel wall. This corresponds to the third heading of our criteria. We believe that in many cases this must be purely a microscopic diagnosis and that invasion, short of local metastasis, cannot be determined by palpation or gross appearance. Consequently, if the tumor has been destroyed in the process of its removal, or if only a small biopsy specimen has been secured, this characteristic may not be recognized. Reference to table 2 shows that 15 of these malignant adenomas were invasive and that the remaining 23 were not. The incidence of simple recurrence in the two groups is also indicated in this table, as is the incidence of frank adenocarcinoma. Especially striking and significant is the fact that the 5 adenocarcinomas occurred within the group of 15 originally invasive adenomas. Hence we see that one third of the tumors that originally showed invasion developed into cancer. The serious portent of the disease in this small group of 5 patients is further

7. Swinton, N. W.: Diagnosis and Treatment of Mucosal Polyps of the Rectum and Colon, with Early Malignant Change, Am. J. Surg. 73:369-379 (Feb.) 1948.

8. Many patients whose records and follow-up are included in this report are from the clinical material of Dr. Harvey B Stone.

emphasized when it is learned that 3 of the patients died of their cancer, one is doomed by extensive metastases and the fifth appears to owe his life to an all but miraculous cure.

This last patient has a particularly interesting history. In March 1939 a polypoid lesion 1 cm. in diameter was found on the anterior rectal wall 12 cm. above the sphincter. This was excised with a cuff of mucosa, and on pathologic examination proved to be an adenoma malignum (fig. 2) with early invasion. A radical operation was advised but refused by the patient. The operative site healed promptly, but four months later a definite recurrence had developed and an anterior resection of the rectosigmoid was performed with a colostomy and inversion of the rectal stump. The patient progressed well, and after another four months the colostomy was taken down and the sigmoid end was

Fig. 2.—Photomicrograph from original rectal adenoma of case reported in text. Note deep staining of many of the epithelial elements as well as irregularity in contour and thickness of glandular walls.

anastomosed to the rectal stump. The patient remained well except for a stricture at the anastomosis which responded to dilatation. However, early in 1943 he became chronically ill, with a dry cough, malaise, weight loss and intermittent fever. A roentgenogram of the chest revealed a well circumscribed mass in the right lower lung field. Since this was a solitary mass and there were no other evidences of recurrence of his rectal carcinoma, it was believed that thoracotomy was indicated. On Sept. 22, 1943 a right pneumonectomy was performed by Dr. Alfred Blalock. Pathologic examination of the right lung demonstrated a tumor 5 cm. in diameter in the lower lobe. On microscopic section (fig. 3) the lesion proved to be metastatic adenocarcinoma without involvement of the hilar lymph nodes. This patient remains in good health without signs of recurrence, ten years after the removal of his polyp and five and a half years after the pneumonectomy for a pulmonary metastasis.

In several patients multiple recurrences developed, and it is our impression that this constitutes a poor prognosis, even though pathologic examination of the recurrence may not demonstrate adenocarcinoma. One such patient was found to have a large polypoid lesion on the lateral rectal wall 6 inches (15 cm.) above the sphincter. This was excised, and the operative site healed uneventfully. In the course of the next five years four recurrences developed at the same location, and it was only the last of these that proved to be frank adenocarcinoma. Shortly thereafter he was subjected to radical operative intervention elsewhere. He died in the postoperative period of causes unknown to us. In such a case repeated failure to destroy the growth may constitute an indication for radical surgical measures in the same manner that radical surgical treatment of a prophylactic nature is advised in multiple polyposis.

In a discussion of recurrence of these adenomas, mention should be made of the frequency with which multiple growths are found. Several of the patients reported here had more than one polyp when first examined, and follow-up examinations on several others revealed the presence of new polyps which were not recurrences and which were not present at the initial examination. Reports of autopsy series indicate that approximately one half of such patients have more than one polyp. Consequently, the patient with a colonic adenoma should be considered as having a predisposition for the formation of these growths and should be advised to have periodic, thorough examinations for the detection of new lesions. Approximately 60 per cent of colonic adenomas can be seen through a 25 cm. sigmoidoscope. For those lying above this level, diagnosis by means of the air contrast barium enema is indispensable, though not entirely reliable.

## COMMENT

The fact that 28 of these patients exhibited no further signs or symptoms of disease after the removal of their malignant adenomas adds further weight to the growing evidence that there is a group of these lesions which does not require radical operative removal. Cattell,[9] after having found no residual malignant tissue in the resected specimens, reached the same conclusion in some cases in which radical surgical treatment had been performed after local excisions of malignant adenomas. However, he went on to stress, as we do, the great importance of repeated sigmoidoscopic examination and, if indicated, biopsy . Should malignant growth subsequently appear in the bowel wall, radical operative measures must be undertaken. It would further appear that the experience with the patients of this series gives a clue toward the selection of those with malignant adenomas which require radical resection. The small group of patients in whom carcinoma developed all belonged to the larger group with malignant adenomas that showed invasive tendencies. When such evidence of invasion is present, radical operative intervention in general is indicated. This advice must be qualified by the necessity of individualizing these patients, especially with regard to advancing age and general physical condition. With these exceptions out of the way, the likelihood in this small group of the development of clinical cancer is far greater than the mortality associated with abdominoperineal resection. One must not lose sight of the urgency of radical resection for any established malignant growth in the bowel wall. It is the only sound treatment.

9. Cattell, R. B.: Surgical Treatment of Polyps of the Large Intestine, Am. J. Surg. 76:733-747 (Dec.) 1948.

The most commonly reported method of treating adenomas of the lower part of the bowel is destruction by fulguration through a sigmoidoscope with or without preliminary biopsy. Buie, Smith, Jackman and Hill [10] have recently presented a valuable study of their unparalleled experience in dealing with the polypoid lesions of the lower portion of the bowel and have emphasized the indispensable part of fulguration in their management. It is to be pointed out that there are dangers inherent in this method in the hands of any but experienced proctologists. It will be generally conceded that one of the drawbacks to fulguration is that the technic frequently destroys much or all of the specimen. It is on the careful histologic examination of the entire tumor, particularly in the region of the base, that we believe the treatment and prognosis should be determined. Most of the tumors in this report were excised with a cuff of surrounding mucosa by delivering the tumor into or through the anal canal after dilatation of the sphincter. As Dr. Harvey B. Stone has frequently pointed out, it is often surprising from what a distance a polyp can be brought into an accessible range. In general a polyp which can be felt with the finger can be made accessible for excision. There are, of course, exceptions. David [11] has recommended division of the sphincter in the posterior midline in order to increase exposure. For the higher lesions, we believe that transperitoneal colotomy should be employed more frequently and can be done with greater safety than ever before. The surgical experiences in this group of patients, the pathologic observations and the follow-up studies all point to the value of a wider utilization, where possible, of the principle of surgical excision of the adenomas of the lower portion of the bowel. By this method the polyp is out, the pathologist has an adequate specimen, and the prognosis not only can be formulated but usually can be controlled.

Fig. 3.—Photomicrograph of metastatic tumor of left lung (same case as fig. 2). The identical pattern of the rectal malignant polyp is repeated microscopically in the metastatic area in the lung field.

## SUMMARY AND CONCLUSION

Polypoid lesions of the lower portion of the bowel are of special interest because of their close relationship to adenocarcinoma of the same region. The adenoma showing malignant change (adenoma malignum) presents a problem in management. There has been a paucity in reports of such cases with good pathologic and adequate follow-up studies. In determining the pathologic status of these lesions, stress is laid on differentiation by microscopic appearance and the value of sections of the intact polyp. Pathologic criteria have included changes in the cells, the alteration in the glandular structure and occasionally the tendency to invade. The clinical studies cover 38 cases, all treated by local surgical methods, all having sections showing malignant change in the adenomas and all having been followed for more than a year. Twenty-eight, or nearly three fourths of the group, have remained well following local removal of their polyps. Ten, or approximately one fourth, have had one or more local recurrences, which in 5, or approximately one eighth, were clinical cancer. Most recurrences came within a year. Fifteen of these tumors originally showed microscopic evidence of invasion. The tumors of the 5 patients in whom clinical cancer developed were in this group, emphasizing the prognostic significance of this observation. The frequent occurrence of multiple growths presupposes complete and repeated examinations. Finally, the evidence indicates that most of these patients can be cured by complete local eradication of the polyp; that a tendency of the tumor to invade the bowel microscopically is a poor prognostic sign and may be an indication for radical operative removal, and that prolonged careful follow-up is required. The radical resection of growths of established malignancy is mandatory. Although fulguration is an indispensable form of treatment for many such lesions, it has inherent dangers and fails to allow for securing a specimen of the entire tumor. A wider utilization, where possible, of the principle of surgical excision of these polyps is stressed, for thereby the polyp is well treated, the pathologist has an adequate specimen and the prognosis can be better formulated and even controlled.

## ABSTRACT OF DISCUSSION

DR. HARVEY B. STONE, Baltimore: I congratulate Drs. McLanahan, Grove and Kieffer for presenting a timely and valuable paper which is a contribution to a problem of vital importance, one that is by no means generally clarified. Basically stated, should the presentation of a rectal polyp be regarded as the earliest and most favorable opportunity to carry out a radical surgical attack for carcinoma, or would that attitude entail unnecessarily destructive surgery for certain lesions which were essentially innocent? That is the issue. I would emphasize the principles enunciated by Dr. McLanahan: where feasible, local excision of the lesion, with an ample surrounding margin as its base, is ideal primary

10. Buie, L. A.; Smith, N. D.; Jackman, R. J., and Hill, J. R.: Polypoid Lesions of the Terminal Portion of the Colon, J. A. M. A. 139: 702-709 (March 12) 1949.

11. David, V. C.: The Management of Polyps Occurring in the Rectum and Colon, Surgery 14: 387-394 (Sept.) 1943.

treatment, rather than immediate radical operation, or the destruction of the polyp itself by fulguration. The first alternative of an extensive operation of destructive character is obviously not necessary in a great many of these cases; and the other alternative of destruction by fulguration of the lesion itself deprives one of an opportunity to determine its exact nature and the precise implications of the prognosis of such a lesion. The real question, and I am still in some doubt about it, is, what should be the surgeon's attitude in those cases where the polyp has been removed and where the microscope shows an invasive process involving its pedicle and perhaps its base? On the basis of that information, should one proceed without further waiting to perform a radical resection, or should one wait and watch the further course before reaching a definite decision? My feeling, particularly in view of the fact that 15 of these cases are reported, in only 5 of which there was local recurrence, is that it would be wiser not to assume from the histologic appearance alone that it is necessary to do a radical procedure at once but, rather, to wait and observe the further course of the disease. But that theory carries with it the emphatic obligation to make sure that frequent follow-up studies are carried out without fail; otherwise there will be local recurrence in a perceptible number of patients. That leaves for consideration the cases in which there is local recurrence. Should one go ahead and perform a radical operation? My opinion would be that removal of the recurrence and further observation would carry with it a heavy responsibility which the experience here recorded would hardly justify. Further experience may help. I believe that if there is a local recurrence of an invasive type of polyp, it would be hard to condemn the conclusion that this is sufficient justification for a radical operation.

DR. MARTIN S. KLECKNER, Allentown, Pa.: The authors have endeavored to outline an avenue of approach via the anal canal whereby selected malignant adenomatous polyps within the range of the sigmoidoscope may ofttimes be effectively eradicated, either by surgical or electrical means. Proper examination with the gloved finger and the use of low and high lighted scopes (the latter being the sigmoidoscope), coupled with the information secured from the biopsy, will give the proctologist information as to the size, position, degree of mobility and also pathologic classification of the polyp. He will observe whether the growth is sessile or pedunculated. These facts will enable him to select the method, via rectum or abdominal wall, which he believes to be most adaptable for the removal of the growth and also to give the patient the best possible chance for cure. If during the sigmoidoscopic examination a polypoid growth is discovered, it is urgent that radiologic study of the rest of the large bowel be undertaken by double contrast barium air enema, prior to any operative procedure in the office or the hospital. Using the fulgurating snare and scope, I have taken out fully thirty-five rectal and sigmoidal polyps, ranging in size from a cherry stone to the cherry itself, which showed early to definite malignant change. Of this number, perforation resulted in two and abdominal entry was necessary. In this same group of cases which were checked at intervals of one to three months, it was necessary eventually to perform radical resection in 25 per cent. Villous papillomatous growths (ten in series), ofttimes the size of a lemon and bleeding profusely, were most frequently located in the distal 5 inches (13 cm.) of the terminal portion of the bowel. They possessed a stout pedicle and were resected per rectum, the base then being cauterized. Although 30 per cent of the lesions showed definite malignancy, only one demanded the Miles operative procedure after four years. The great danger in surgical excision by rectal approach is the possibility of injury and serious subsequent infection above the line of peritoneal reflection, particularly when the growth is on the anterior surface of the bowel. Likewise, this conservative type of treatment may act as a boomerang later on, when there are recurrences, and it appears that a primary radical surgical procedure would have been the better course. Good anatomic knowledge, thorough study of the malignant polypoid growth and the exercising of profound skill and judgment are required on the part of the surgeon to determine whether sigmoidotomy, by laparotomy, or proctotomy, by rectal approach, is better.

## PYOGENIC ARTHRITIS WITH PATHOLOGIC DISLOCATION OF THE HIP IN INFANTS

JESSE T. NICHOLSON, M.D.
Philadelphia

This report presents a study of 10 subjects treated at the Philadelphia Children's Hospital who had pyogenic arthritis with pathologic dislocations of one or both hips before 18 months of age. Four subjects have been followed seventeen years (1 twenty-eight years). Their femoral and pelvic growth appears to be complete. Two additional subjects have been followed eleven years. One subject, who had been followed four years prior to the war, has not subsequently been discovered. Three subjects have been admitted to the hospital in the past three years.

*Contributing Infection in Ten Cases of Pathologic Dislocation of the Hip*

| Patient | Initial Infection | Organism | Septicemia | Hip Culture | |
|---|---|---|---|---|---|
| | | | | Left | Right |
| O. C. N. | Skin eruption | ..... | ..... | Staph. | ..... |
| M. G. | Lobar pneumonia<br>Otitis media | Pneumococcus | ..... | Pneumococci | ..... |
| B. I. | Ethmoiditis | ..... | Hem. strep. | Hem. strep. | ..... |
| J. D. | Sinusitis | ..... | ..... | Not determined | ..... |
| T. M. | Sinusitis<br>Otitis media | ..... | Hem. strep. | Hem. strep. | Hem. strep. |
| F. B. | Pneumonia<br>Otitis media | ..... | Hem. strep.<br>Staph. albus | Hem. strep.<br>Staph. albus | .....<br>..... |
| A. L. | Parotitis | Hem. strep. | Staph. albus | Hem. strep. | Hem. strep. |
| P. F. | Otitis media | Staph. albus | ..... | ..... | Not determined |
| W. D. | Fetal erythroblastosis | ..... | Staph. albus | Staph. albus | ..... |
| A. F. | Pneumonia<br>Otitis media | Pneumococcus<br>Staph. albus | ..... | ..... | Not determined |

The study was prompted by two observations: first, the delay in diagnosing the infection of the hip and the resulting dislocation in infants; second, the resulting changes in the hip joint which were at variance with those observed in children with sepsis of the hips. These changes which took place during growth and development were manifest in four ways.

### ETIOLOGY

In every instance the hip joint was involved secondarily (see the accompanying table). The primary infection in 5 infants was bilateral otitis media (3 of these cases were complicated by pneumonia, 1 by sinusitis); in 2 infants, sinusitis (1 case of ethmoiditis with streptococcic septicemia); in 1 infant, fetal erythroblastosis with staphylococcic septicemia; in another, parotitis with staphylococcic septicemia, and in still another, a skin eruption.

Septicemia was proved in 5 cases by blood culture. Two cultures yielded staphylococci, 2 streptococci and 1 staphylococci and streptococci.

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From the hip joint, the organism was cultured following aspiration or drainage of material in 7 instances. Three infections were due to hemolytic streptococci, 2 to hemolytic staphylococci, 1 to pneumococci, 1 to staphylococci and streptococci.

Other metastatic lesions were present in 6 infants. One had an abscess in the deltoid region. Five had other joints involved; in 2 of the 5 the opposite hip was affected.

Fig. 1.—Abduction of the leg on the involved side is restricted when a dislocation has occurred.

## DIAGNOSIS

The time elapsed before recognition of the infection of the hip joint in these infants after the onset of illness varied from five days to three months. The delay was due to several complications. The infant was severely ill. His illness was always attributed to an infection that demanded his admission to the medical or otolaryngologic service. In 1 infant there developed in turn pneumonia, cervical adenitis, otitis media and an abscess of the arm before the infection of the hip joint was recognized. Not infrequently, spontaneous rupture of the infected hip joint occurred and the resulting abscess in the thigh was drained without recognizing the infection in the hip joint as the source of the abscess.

Abscess formation in the thigh occurred along the adductor tendons, in Scarpa's triangle or posterior to the greater trochanter of the femur. There were three sources for these abscesses. As the joint capsule became stretched with exudate, the capsule ruptured at its inferior, medial portion. The abscess pointed between the adductor longus, anteriorly, and the adductor brevis and adductor magnus, posteriorly. The femoral and

Fig. 2.—Tracing of roentgenograms to show the comparative angles of the superior rim of the acetabulum with the horizontal in *A*, infant with pyogenic arthritis with bilateral pathologic dislocation of hips, *B*, normal infant and *C*, infant with bilateral congenital dislocated hips.

external iliac glands broke down with abscess formation. An abscess of the femoral gland, particularly the gland of Colquit or Rosenmüller, situated beneath Poupart's ligament, pointed in Scarpa's triangle. The abscess of the external iliac gland lay retroperitoneally above the thin sheath of the psoas muscle, so that it extended upward into the false pelvis or gravitated downward along the iliopsoas muscle.[1]

The diagnosis of sepsis of the hip in an infant may be established by the following observations:

1. There is a primary illness, such as otitis media, pneumonia, sinusitis, abscess or furuncle.
2. The thigh of the side of the involved hip is held in flexion.
3. The irritability of the infant is increased by an attempt to change the position of the leg.
4. Enlargement of the thigh is observed.
5. Aspiration of the hip joint is rewarded by material that yields a positive smear or culture.

In 2 infants within the past three years the diagnosis of sepsis of the hip was not made until convalescence was completed. These infants had been treated with penicillin during the acute stage of their illness. One had otitis media. The other had been bedfast for three months with pneumonia, pertussis and bilateral otitis media. In both instances the unstable gait of the child after recovery from the illness prompted the parents to bring the child to the hospital.

Dislocation is a frequent sequela in septic arthritis of the hip. The position of flexion and adduction which is produced by protective muscle spasm is an unstable one for the hip joint. This position gives the greatest

Fig. 3.—Roentgenogram of J. D., aged 18, March 5, 1949. Seventeen years after a pyogenic dislocation of the left hip at 12 months of age, there is full range of hip motion but with minimum changes in the head and neck of the left femur.

relaxation of the capsule. The infection producing an increase in joint fluid and exudate balloons out the hip joint capsule. Lenggenhager [2] has explained the dislocation as a result of the head being floated from the socket. He demonstrated this by the use of a metal ball in a saucer with a cuplike center. By introducing oil in the saucer, the displacement of the ball from the center cup was facilitated.

Among the 10 infants, the dislocation existed and was recognized in 3 when the septic arthritis was diagnosed. The dislocation was not recognized until one month later in 3 others and not until three to fourteen months had transpired in the remaining 4.

The diagnosis of pathologic dislocation of the hip in an infant is determined as follows:

1. The leg on the involved side is restricted in abduction (fig. 1).

2. The transverse crease in the thigh may appear to be deeper, or an extra crease may be apparent.

3. A roentgenogram will show an elevated position of the upper femoral metaphysis, a position of the

1. Freiberg, J. A., and Perlman, R.: Pelvic Abscesses Associated with Acute Purulent Infection of Hip, J. Bone & Joint Surg. 18: 417 (April) 1936.

2. Lenggenhager, K.: Spontaneous Luxation of Hips, Schweiz med. Wchnschr. 76: 381 (May) 1946.

metaphysis more lateral to the acetabulum, and the acetabular rim will be developed sufficiently to meet the specification for a normal hip socket of an angle of 30 degrees or less with the horizontal as emphasized by Kleinberg and Lieberman[3] (fig. 2).

## SEQUELAE

The sequelae of the pyogenic hip with pathologic dislocation have been described by Slowick[4] and Badgely and others[5] as at variance from those observed in a child. Motion of the hip joint was normal after reduction of the dislocation if the ossification center of the capital epiphysis was preserved. Recurrence of infection was not subsequently encountered. Among the 10 infants forming the basis for this report, four types of residual changes were observed as growth and development advanced:

1. *Minimal Roentgenologic Changes in the Femoral Head and Neck.*—There were 2 subjects with minimal roentgenologic changes. They had had unilateral involvement. They had had no changes in the femoral head following reduction of the dislocation of the hip. They had remained free from symptoms, and the involved hip retained motion symmetric to the uninvolved hip. By clinical measurement no difference in leg lengths was determined. One subject was observed for seventeen years after a pathologic dislocation at 1 year of age during acute sinusitis. The other subject was observed for eleven years after the hospital admission, at 6 months of age. This subject had had pneumonia two months previous to admission, followed by cellulitis of the neck and bilateral otitis media. He had a positive blood culture for staphylococci and streptococci. An abscess developed on his arm. Ten days after admission, it was discovered that the hip was dislocated. The culture of material obtained from the hip by aspiration and drainage showed both staphylococci and streptococci. This subject had an uneventful recovery after being held eleven weeks in a plaster of paris spica and five additional weeks in traction. In both subjects the femoral neck was found to be shortened and the height of the head diminished (fig. 3).

Fig. 4.—P. F., an infant aged 11 months whose dislocation became apparent on ambulation. *A*, notice the normal development of the right acetabulum and the increased density of the dislocated capital epiphysis; *B*, two months after reduction, disappearance of the capital epiphysis; *C*, three years later at age of 4 years (March 1, 1949) the capital epiphysis and femoral neck show a typical coxa plana deformity as from osteochondritis of the femoral head.

Fig. 5.—A. L., *A*, bilateral hemolytic streptococcic arthritis of hip with dislocations in an infant 1 month of age; *B*, reduction at 5 months of age (Oct. 20, 1938) following successive abduction plaster casts; *C*, roentgenogram at 10½ years of age (March 5, 1949) reveals a dislocation of the neck of the femur and loss of development of the acetabulum.

2. *Circulatory Necrosis of the Head of the Femur.*—Circulatory necrosis of the femoral head was demonstrated by an infant aged 11 months admitted to the hospital in February 1946. One month prior to admission she had had bilateral otitis media, following which she began to walk with a limp. The ears were draining on admission; culture revealed Staphylococcus aureus. Roentgen examination showed that the ossification center of the femoral head was equal in size to that of the opposite hip. The rim of the acetabulum was well formed, but the hip was dislocated from the socket (fig. 4*A*). Well-leg traction was applied, and the head of the femur was drawn down opposite the acetabulum. It was then reduced and held in an abduction plaster for three months. At this time, it was noticed that the head had undergone absorption (fig. 4*B*). Use of an abduction brace was continued. A year later, the capital epiphysis presented changes resembling those from osteochondritis. Three years later, a coxa plana deformity (osteochondritis of the capitular epiphyses) had developed (fig. 4*C*).

Fig. 6.—O. C. This dislocation of the left hip was not recognized until sixteen months after an abscess of the left thigh was drained. The ossification center of the femoral head absorbed. The roentgenogram of the subject at 29 years of age (Feb. 26, 1949) shows the adaptation of the femoral neck to the acetabulum.

3. *Faulty Development of the Acetabulum.*—Faulty development of the acetabulum occurred only if the head of the femur or nubbin of neck failed to be maintained in the acetabulum. Illustrative of this was the infant who was admitted at 1 month of age on June 6, 1938. His birth had been difficult after a five hour labor. He was rigid at birth and spit bright blood. One leaving the maternity hospital, it was noticed that he had a swelling of the right side of the face. One week later the infant resented having his legs moved. On admission to the hospital he had septicemia due to Staph. aureus, but hemolytic streptococci were found in material aspirated from both hips (fig. 5*A*). Culture of drainage material from the parotid gland also yielded hemolytic streptococci. The dislocated hips were reduced by gradually increasing their abduction by means of cast changes at two week intervals (fig. 5*B*). The head of the femur on the left side failed to develop. After five years the non-weight-bearing caliper brace was discarded, and one year later the left hip luxated. The roentgenogram five

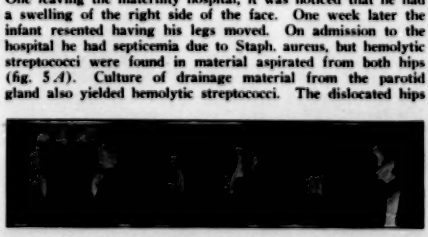

Fig. 7.—B. I. had pathologic dislocation of the hip at 11 months of age with reduction at 13 months. *A*, varus position of the neck of the femur and an unstable hip necessitated use of a non-weight-bearing caliper brace until the age of 5½ years (1936); *B*, roentgenogram in 1936 following subtrochanteric osteotomy to correct varus position of the neck; *C*, roentgenogram March 3, 1949 (patient aged 18) thirteen years after subtrochanteric osteotomy, showing the development of the hip joint as result of correction of coxa vara.

3. Kleinberg, S., and Lieberman, H. S.: The Acetabular Index in Infants in Relation to Congenital Dislocation of the Hip, Arch. Surg. 32: 1049 (June) 1936.

4. Slowick, F. A.: Purulent Infections of Hip; Analysis of Sixty Cases, New England J. Med. 212: 672 (April 11) 1935.

5. Badgely, C. E.; Yglesias, L.; Perham, W. S., and Snyder, C. H.: Study of the End Results in One Hundred and Thirteen Cases of Septic Hips, J. Bone & Joint Surg. 18: 1047 (Oct.) 1936.

years later revealed a shallow acetabulum or loss of acetabular development and a dislocation of the femoral neck (fig. 5 *C*).

4. *Absorption of the Femoral Head.*—Absorption of the femoral head occurred in 7 instances among the twelve hips which had a pathologic dislocation. It was believed that the absorption was of the ossification center of the femoral head. Late recognition of the septic condition of the hip appeared to favor this result. One case bears this out well. The patient was admitted to the hospital at 11 months of age, on June 27, 1921. The illness was of three days' duration, following a skin eruption of the face and chest. An abscess in Scarpa's triangle on the left thigh was drained three weeks after admission. The dislocation of the left hip was not recognized until sixteen months after the onset of the illness. A non-weight-bearing brace was applied, which the subject wore for twelve years. The woman is now 29 years of age. The left hip motions are: flexion, 165 to 90 degrees; abduction, 10 degrees; adduction, 15 degrees; internal rotation, 5 degrees, and external rotation, zero. The result of the Trendelenberg test is positive. The leg is 1¼ inches (3.18 cm.) shorter than the opposite one. The roentgenogram reveals the short stump of the neck, which has accommodated itself to the acetabulum (fig. 6). There are 2 other patients in this group who have been followed eighteen and nineteen years. They both show a corresponding difference in leg lengths but a greater range of hip motion and a negative result in the Trendelenberg test. One has flexion from 170 to 70 degrees; abduction, zero; adduction, 30 degrees; internal rotation, 10 degrees, and external rotation, zero. The other, who had a subtrochanteric osteotomy to produce a valgus position of the neck at 5 years of age (fig. 7 *A, B* and *C*), has now a range of hip motion as follows: flexion, 170 to 40 degrees; abduction, 20 degrees; adduction, 10 degrees; internal rotation, 10 degrees, and external rotation, zero. This man works as an auto mechanic. He walks 7 miles (10 km.) at a stretch. He plays baseball, goes roller skating and rides a bicycle 38 miles (61 km.) in a day.

In the 3 subjects who had completed growth, after absorption of the ossification center of the femoral head there was no difference roentgenologically in the comparative measurements with the uninvolved side of the femoral length from medial condyle to the trochanter. There was 1¼ to 1½ inches (3.18 to 3.81 cm.) difference in length from the superior acetabular rim to the medial femoral condyle, which represented the loss of the femoral head. Although the pelvis was smaller on the involved side, the comparative acetabular diameters remained the same.

## TREATMENT

The recommended treatment for pyogenic arthritis with pathologic dislocation of the hip was that of the general infection with the use of antibiotics, fluids and whole blood as indicated. Fluid from the infected hip was aspirated for diagnostic purposes. The dislocation was reduced as soon as possible. In acute conditions this was generally done with moderate traction and internal rotation and maintained by abduction. After the dislocation had persisted several weeks, a tenotomy of the adductor tendons was necessary to obtain the reduction. Infants aged 1 year who had had the dislocation for some months required a period of traction before the reduction was attempted. Hoke well-leg traction had been used satisfactorily in unilateral dislocation. In small infants with bilateral dislocation, abduction was instituted until a position of 90 degrees was obtained for each hip. The abducted position of the legs was accomplished by double spicas of plaster of paris. These were changed at two week intervals until a full 180 degree spread was obtained. The aspiration of fluid from the hip joint was repeated if the fluid recovered was turbid and if pain in the hip continued in spite of immobilization. Drainage of the hip was indicated if the subject's toxemia persisted after immobilization in plaster in the absence of septicemia or other foci of infection, and if the symptoms of the infection in the hip joint had been of two weeks' duration and the aspirated material from the joint was of such purulence as to denote suppuration. Posterior drainage of the joint after the method of Ober was preferable. It was used in but 1 instance. In 4 infants in whom involvement of the hip joint was not recognized and the joint abscesses ruptured spontaneously, the abscesses were drained in Scarpa's triangle, along the adductor tendons or over the trochanteric region in cases in which they pointed subcutaneously.

Open reduction of the dislocated hip was indicated in those cases in which there was failure to reduce the dislocation or the joint redislocated under conservative means of treatment. Two open reductions were performed in this group of cases, 1 thirteen months after onset of the illness, which occurred when the patient was aged 6 months. This patient had fetal erythroblastosis and a staphylococcic septicemia with involvement of his left hip, left knee, right knee, left elbow and right shoulder. The left hip and right knee required open drainage. The left hip was held in the acetabulum by means of abduction, but the dislocation recurred about six months after reduction. The dislocation could not again be reduced when the attempt was made five months later. An open reduction was performed when the patient was 10 months of age by means of a Smith-Petersen approach. A dense fibrous scar was interposed between the epiphysis of the neck of the femur and the acetabular cavity. There was no cartilage in the acetabular cavity, but the cartilaginous rim of the acetabulum remained intact. After removal of the fibrous scar tissue, the neck of the femur was placed in the acetabulum and the position of abduction was held by means of a double hip spica for a period of three months, then an abduction brace was used for three months. From observation of other cases, this child will require a non-weight-bearing caliper brace for a period of some years. The other hip that was reduced openly had remained dislocated since the acute infection seven months' previously. The cartilage of both the acetabulum and epiphysis of the neck was preserved, though separated by dense fibrous tissue.

The non-weight-bearing caliper brace was used from four to fourteen years in the 3 subjects who have been followed for more than eighteen years and who had total absorption of the heads of their femurs. These subjects were cared for in this way by William J. Merrill, who died in 1935. They are outstanding examples of the value of the non-weight-bearing caliper brace for obtaining and maintaining the reduction of the nubbin of the neck in the acetabulum. Figure 5 *C* shows the result of discontinuing use of the non-weight-bearing caliper brace before the femoral neck has adapted itself to the acetabulum.

Osteotomy to place the epiphysis of the neck of the femur in a more valgus position was found to lead to a more stable hip. It sped up the adaption of the neck to the acetabulum. It permitted use of the non-weight-bearing caliper brace to be discontinued after four years in the 1 subject for whom the operation was performed. An increased range of hip motion resulted and has been maintained for thirteen years. This patient was admitted to the hospital March 16, 1932, at 11 months of age. Two weeks previously he had had acute ethmoiditis which resulted in a hemolytic streptococcic septicemia. He had an involvement of his right knee and his left hip, from both of which fluid was drained. Subsequent to surgical operation he was treated in traction, and after that a non-weight-bearing

caliper brace was used until he was 5 years of age. At this time, an osteotomy was performed at the level of the lesser trochanter (fig. 7 *A* and *B*). Of the 3 subjects who had total absorption of the capital epiphysis of the femur and who have been followed for more than eighteen years, this patient has the greatest range of motion and absolute freedom from pain (fig. 7 *C*). Harmon and Adams[6] have demonstrated a similar development over a four year period in the femoral neck following osteotomy for the same reason in a patient at the age of 10 years.

## CONCLUSION

An infant with otitis media or sinusitis should be regarded as a potential subject for sepsis of the hip. After such infections pathologic dislocation of the hip developed early because of the pronounced effusion within the hip capsule. It was recognized by the limitation of abduction of the involved leg. After reduction, immobilization in abduction and extension by means of a double plaster of paris spica proved satisfactory. The hip was drained when the infection was not recognized until late or when there was thick material on aspiration. Ankylosis of the hip and recurrence of infection were not complications. Residual change was observed by roentgen examination of the femoral head and neck at the completion of growth, although there was normal hip function and freedom from symptoms. Circulatory necrosis of the head occurred after reduction, but revascularization took place. The ossification center for the femoral head was frequently destroyed. If the neck was held in the acetabulum a stable hip resulted, but a luxation did not favor development of the acetabulum. A non-weight-bearing caliper brace was used if there had been destruction of the ossification center of the head of the femur. An osteotomy to produce a valgus position of the neck of the femur obviated continued use of the brace and resulted in a more stable hip with a greater range of motion. On completion of growth, the loss of the ossification center of the head of the femur resulted in 1¼ to 1½ inch differences in leg length. The diameter of the acetabulum was equal to that of the normal side if reduction of the dislocation was maintained.

330 South Ninth Street (7).

## ABSTRACT OF DISCUSSION

DR. HENRY B. CRAWFORD, Rochester, N. Y.: That the infant's femoral head is mostly composed of cartilage, which is quickly dissolved by pus, probably explains the easy dislocation when adducted and the absence of osseous ankylosis in the younger patients even when the dislocation is reduced. The fact that the septic conditions of these hips were all diagnosed late because the patients were on the otolaryngologic or medical service emphasizes the necessity of stressing in instructions to medical students Dr. Nicholson's first conclusion, that any infant with otitis media, sinusitis or septicemia from other foci should be regarded as a candidate for joint infection, and these conditions should be looked for each day. The best test I know for detecting early evidence of hip joint disease is to place the patient face down with his knees together and flexed 90 degrees so that his feet are up toward the ceiling. When the thighs are simultaneously internally rotated by separating the feet, the pelvis will roll with the affected hip. It is well to remember that spasm from a spinal lesion or an appendical abscess may also cause flexural contracture of the hip, but in these conditions the hip rotates freely when it is flexed 90 degrees. It seems worth noting that in 7 of the 10 cases dislocation of the hip was not recognized until one to fourteen months after the original sepsis of the hip was diagnosed. I would like to ask whether any method of maintaining adduction had been used prior to the diagnosis of dislocation. Physicians should remember the importance of preventing adduction deformity in any hip with sepsis, and I wonder whether fixation in abduction might not prevent dislocation if applied early enough and maintained long enough. In the résumé of this paper printed in the program of the Scientific Assembly it is stated that drainage of the hip joint was of questionable value. This statement was based on observing the results of late drainage. I believe that early drainage in cases of pyogenic joint infection is still a valuable procedure to help prevent destruction of articular cartilage. I would like to hear some comment as to whether repeated aspiration of fluid from the joint and injection of penicillin would be a better procedure in these exceedingly sick infants when the diagnosis is made early. It has been found that in cases of joint infection in which drainage is employed, rimming the petrolatum-packed wound with sponges dipped in Unna's paste to form a wall between the margins of the wound and the spica helps to prevent irritation of the skin from drainage under a cast.

DR. JOHN A. HEBERLING, Pittsburgh: Dr. Nicholson has presented a complete and careful study of a condition which has always been most difficult to treat and in which the final results are too frequently unsatisfactory. Early recognition and immediate treatment is most important. There is not always a primary illness, such as otitis media or pneumonia, and the local signs in the hip joint itself are the only symptoms of disease. These are frequently missed by the medical practitioner. Thickening, swelling of the thigh and limitation of motion are the usual local observations, accompanied with the ordinary clinical and laboratory evidence of infection. The roentgenogram may show widening of the joint space and actual dislocation of the femoral head. The author states that dislocation is a frequent sequela of septic arthritis, but I believe that it is always present unless the condition is recognized early and proper treatment instituted. Traction in abduction or at 90 degrees suspension (the latter method being useful in infants), aspiration or even incision and the use of suitable antibiotics give the best results. The integrity of the hip joint must be preserved as far as possible: the femoral head must be kept in the acetabulum or replaced and its position maintained. In 1941 I reviewed 201 cases of suppurative joint disease involving 220 joints treated by incision and active motion. This series covered the years 1920 to 1940. None of these patients received antibiotic therapy of any kind. There were 13 deaths. The poorest results were in patients, particularly children, with involvement of the hip joint. The use of the sulfonamide drugs and penicillin is not the complete answer. Earlier common-sense surgical principles must not be forgotten but must be combined with suitable drug therapy in the treatment of these suppurative joint infections.

DR. JOSEPH S. BARR, Boston: Dr. Nicholson has shown that the management of suppurative arthritis of the hip in children is a serious problem and that physicians are far from having a satisfactory answer by methods which they have used. What can be done to improve treatment? First, the pediatrician and the otolaryngologist must be alert to this problem and call in competent surgical help as soon as infection of a major joint is suspected. It is up to orthopedic surgeons to talk to pediatricians about the importance of the problem, just as Dr. Hart has been carrying the word about congenital conditions of the hips. Pressure necrosis is an important part of the problem, local pressure necrosis from a distended hip capsule. Chemotherapy is not the answer to local pressure necrosis. These hips must be drained. That can be done by repeated aspiration or by open operation, but if on aspiration one finds that there is a good deal of pressure, one must be prepared to relieve it and keep it relieved. It is not enough to aspirate the fluid once and assume that nothing more is necessary. In speaking of drainage, I believe, and I think those who have had experience with drainage agree, that posterior drainage is the proper avenue for drainage and that it should not be done anteriorly. A satisfactory posterior

6. Harmon, P. H., and Adams, C. O.: Pyogenic Coxitis, Surg., Gynec. & Obst. 78:371 (April) 1944.

drainage will give a better result than anterior drainage, gravity helping with the drainage. I prefer traction rather than a cast; the traction itself produces abduction, and one does not have to worry about getting abduction if traction is used. I do not like plaster casts. If the infective organism can be identified early and it is possible to determine which of the chemotherapeutic agents is effective, one can institute proper chemotherapy. One may start treatment with a combination of drugs, but one should find out what the organism is and to which drug it is sensitive, and begin that form of therapy early. I do not believe that prolonged use of non-weight-bearing splints is effective or necessary.

DR. DAVID M. BOSWORTH, New York: I would prefer anterior drainage of the hip. All one is after is decompression.

DR. JOHN WHITFIELD LARRABEE, Hartford, Conn.: In less than eighteen months, there have been 3 cases of this condition at Hartford Hospital. The first case was a baby, one month premature, aged 5 days. The surgeon who was called in thought the condition was a lymphangioma or some similar thing. Aspiration of the hip resulted in a clear culture of Staphylococcus aureus. The child was not ill and did not have a rise in temperature. The second child was three months premature, also did not have any associated infection and, strangely enough, did not have fever. I do not know what the organism was. The third patient was seen only two weeks ago, and that child had no rise in temperature but did have, prior to the discovery of the lesion, an upper respiratory infection. Cases 1 and 3, then, were of Staph. aureus infections. The first 2 patients had spontaneous dislocation of the hip. I mention these because I believe that Dr. Nicholson's paper is exceedingly timely, and if one group observes 3 cases in a little more than a year, it certainly proves that the subject is timely. I would also like to say a word as to posterior versus anterior drainage. Recently a child who had had both hips drained at the age of 5 years, was seen again at the age of 10. The hip that was drained anteriorly has a badly degenerated head and poor function; but one could not tell from the roentgen examination that the hip drained posteriorly had ever been affected.

DR. ALAN DEF. SMITH, New York: The frequency of suppurative arthritis of the hip is decreasing, but nevertheless it still occurs, and in many instances it has been mistreated. Patients have received antibiotics, and the pediatrician, or whoever has been taking care of them, has been depending entirely on the antibiotics to treat these infected hips. Then the patients come in with a destroyed or dislocated hip. It is extremely important to emphasize the fact and to make the physicians who see these patients originally realize that surgical treatment of the infected hip is still necessary, either aspiration or drainage, and in most cases I prefer surgical drainage. That is the important message to be gotten across in order to combat this tendency to rely entirely on antibiotics. When a hip is subjected to pus under pressure it does not take long to destroy the cartilage or to produce a dislocation. Earlier diagnosis must be made. I prefer anterior drainage.

DR. PHILIP LEWIN, Chicago: I believe that every child who has the basic conditions which may produce these serious changes in the hips should be put to bed. The first consideration is abduction, which can be simply accomplished by a Frejka splint. If the pediatricians, the otolaryngologists and the general practitioners could be taught that every child who has one of these anginal infections, nose infections, sinusitis or the septicemias that have been described as the causes of this condition must be put to bed with his legs abducted, I believe this would minimize the necessity for many of these osteotomies and much of the other treatment except, naturally, that of the infection.

DR. A. BRUCE GILL, Philadelphia: I believe in drainage when there is pus in the hip joint. My usual method of securing effective drainage is as follows: At a point just above and behind the great trochanter make a small incision through the skin (with the patient under local anesthesia). Continue the incision through the fascia; thrust a sharp-pointed hemostatic forceps through the incision until it strikes the neck of the femur, direct the forceps upward until it enters the hip joint, spread the blades of the forceps and withdraw it to enlarge the opening into the joint. Then by use of the forceps insert a rubber tube into the joint. This provides posterior drainage when the patient is in a recumbent position. The rubber tube can frequently be removed in a week, and the wound will heal of itself. This, of course, applies only to pyarthrosis not complicated by osteomyelitis.

DR. DAVID M. BOSWORTH, New York: This is a lateral drainage.

DR. A. BRUCE GILL, Philadelphia: It is a posterolateral incision, but it secures posterior drainage of the hip joint.

DR. PAUL HUGENBERGER, Boston: I agree with the comments of the last few discussants. Early diagnosis in sepsis of the hip is absolutely essential, and early proper chemotherapy and drainage is important. It must be remembered that some of these infections are secondary to osteomyelitis of the neck or the region about the hip, and there is drainage into the joint. In these cases repeated drainage, often by needle, is not adequate and loss of the femoral head will result. Also, the pus in many instances is entirely too thick to be adequately removed by needle. I believe that needle aspiration repeated in some cases is satisfactory, but in most cases early posterior drainage with traction, with the early chemotherapy, will give the best result.

## AUREOMYCIN THERAPY IN HUMAN BRUCELLOSIS DUE TO BRUCELLA ABORTUS

ABRAHAM I. BRAUDE, M.D.
WENDELL H. HALL, M.D.
and
WESLEY W. SPINK, M.D.
Minneapolis

In a previous study conducted in México, D. F., aureomycin was found to produce more satisfactory immediate results than any other specific therapy in the treatment of brucellosis due to Brucella melitensis.[1] These results were characterized by prompt clinical improvement, sterilization of the blood and absence of serious side effects. A second group of patients, in whom the infection was caused by Brucella abortus, were treated successfully with aureomycin in Minneapolis, and the present report describes the effect of aureomycin in these 16 patients with bacteriologically proved brucellosis.

### METHODS OF STUDY

Aureomycin was administered orally to 16 consecutive patients from whose blood Br. abortus was isolated by culture (table 1). In every case the severity of symptoms necessitated hospitalization. In 7 patients the duration of symptoms was less than two months. These 7 patients were considered to have acute infections. In the remaining 8 patients the symptoms were present longer than four months, and their illnesses were regarded as chronic. The ages ranged from 18 months to 60 years. Fourteen patients were male and only 2 were female. The number of isolations of Br. abortus from the blood before treatment varied in each patient from one isolation to as many as nine. In 6 patients there were either other diseases or compli-

Aureomycin was supplied by Lederle Laboratories, Division American Cyanamid Company.
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Sponsored by the Veterans Administration and published with the approval of the Chief Medical Director. The statements and conclusions published by the authors are the result of their own study and do not necessarily reflect the opinion or policy of the Veterans Administration.

1. Spink, W. W.; Braude, A. I.; Castaneda, M. R., and Sylva-Goytia, R.: Aureomycin Therapy in Human Brucellosis Due to Brucella Melitensis, J. A. M. A. **138**:1145 (Dec. 18) 1948.

cations due to brucellosis. Arthritis of the hip was observed in 2 boys. A severe anemia of infancy was present in a child aged 18 months. The urine of 1 patient contained large amounts of albumin and leukocytes. In this patient intense jaundice also developed after skin tests were performed with Brucella antigens. These skin tests were not performed for diagnostic purposes but as part of an immunologic study on brucellosis. A diagnosis of chronic nephritis was made in 1 patient who was also found to have residual neurologic abnormalities following a stroke. Intestinal amebiasis was present in a veteran of the last war. Seven patients had been treated previously with other drugs or vaccines, but only 1 had been given a combination of streptomycin and sulfadiazine.

TABLE 1.—*Treatment of Brucellosis by Means of Aureomycin: Summary of Acute and Chronic Cases Due to Brucella Abortus*

| | Acute | Chronic |
|---|---|---|
| Duration | 1 wk. to 2 mo. | 4 mo. to 5 yr. |
| Age | 17 to 50 | 1½ to 60 |
| Sex: Male | 7 | 7 |
| Female | 1 | 1 |
| Number positive cultures before treatment | 1 to 9 | 1 to 4 |
| Cases with complications | Pyelonephritis and jaundice... 1<br>Arthritis of hip.. 1 | Arthritis of hip.. 1<br>Anemia..... 1<br>Amebiasis..... 1<br>Hemiplegia, chronic nephritis 1 |
| Previous therapy | 1 | 6 |

The total dose of aureomycin given to each patient varied. In most cases a total of 2 Gm. of the drug was administered daily in four divided doses at intervals of six hours. Smaller amounts were given to 2 small children. One child 3 years of age received 600 mg. of the agent daily. The infant aged 18 months was given 1 Gm. daily. The minimum period of treatment was ten days, and the maximum period was eighteen days. Blood cultures were obtained before and after treatment in each case. After the treated patients were discharged from the hospital, they returned at regular intervals for physical examinations and blood cultures.

TABLE 2.—*Dose of Aureomycin and Its Effect on the Fever in Acute Infections Due to Brucella Abortus*

| Case | Total Dose in Gm. | Duration of Treatment, Days | Duration of Fever After Initiation of Treatment, Days |
|---|---|---|---|
| 1 | 16.25 | 18 | 7 |
| 4 | 24 | 12 | 3 |
| | 51 | 18 | 3 |
| 5 | 32 | 14 | 3 |
| 6 | 26 | 13 | 4 |
| 9 | 20 | 10 | 0 |
| 11 | 20 | 10 | 4 |
| 12 | 20 | 10 | 6 |
| 16 | 22 | 11 | 7 |

## RESULTS

Decided improvement was observed in every patient soon after treatment with aureomycin was started. A decline in temperature frequently took place within one or two days after therapy began. With 3 exceptions, all treated persons had become afebrile by the end of the fourth day and the longest period of fever was only seven days (tables 2 and 3). Subjective symptoms such as weakness, nervousness, generalized aches and chilliness also subsided promptly. One of the earliest signs of improvement was the cessation of severe drenching sweats.

When splenomegaly was demonstrated, the size of the spleen began to diminish by the second or third day of treatment in some patients. This was not necessarily followed, however, by complete recession of the spleen under the costal margin. In case 7 (table 4) the tip of the spleen was still palpable on examination three months after the completion of treatment, although the patient had been well in every other respect.

A summary of the clinical and laboratory features in each case is given in table 4. Response to therapy was generally as satisfactory in patients with complications as in the uncomplicated cases. Case 1 was that of a young worker in a packing house who became jaundiced on the eighth day of treatment, at which time the serum bilirubin rose to a total of 6.1 mg. per hundred cubic centimeters. No other laboratory abnormalities were noted among a battery of liver function tests, and the use of aureomycin was continued. The jaundice disappeared and general recovery was uneventful. It is of interest that skin tests with four Brucella antigens were applied simultaneously four days before the jaundice became evident. The reactions were strongly positive and were associated with a severe constitutional reaction occurring three hours after injection of the antigens. A biopsy specimen of the liver was taken two days after jaundice was noticeable, and on microscopic examination there were observed numerous large granulomas typical of those described in other cases due to infection by Br. abortus.[2] However, aside from the granulomas there were no abnormalities. A diagnosis of chronic pyelonephritis was also made in this patient on the basis of albuminuria and pyuria, although repeated cultures of the urine for Brucella and other organisms remained sterile. The abnormal urinary observations persisted after treatment.

TABLE 3.—*Dose of Aureomycin and Its Effect on the Fever in Chronic Infections Due to Brucella Abortus*

| Case | Total Dose in Gm. | Duration of Treatment, Days | Duration of Fever After Initiation of Treatment, Days |
|---|---|---|---|
| 2 | 28.0 | 14 | 2 |
| 3 | 8.6 | 14 | 2 |
| 7 | 25.6 | 14 | 1 |
| 8 | 20.0 | 10 | 2 |
| 10 | 28.0 | 14 | 2 |
| 13 | 37.0 | 16 | 1 |
| 14 | 28.5 | 16 | 0 |
| 15 | 14.0 | 14 | 0 |

A diagnosis of infectious arthritis of the hip was made in each of 2 boys. The older of these (case 2) was 12 years of age, and the involvement of his hip occurred one year after an acute illness during which Br. abortus was cultured from his blood.[3] He remained in apparent good health during the intervening year and then noticed the onset of fever, pain in the left hip and a limp which involved the left leg. A flexion contracture of the left hip was found on examination, and Br. abortus was cultured from fluid aspirated from the joint. The flexion contracture disappeared forty-eight hours after the first dose of aureomycin, and all pain and soreness was absent within four days. The younger boy (case 3)

2. Spink, W. W.; Hoffbauer, F. W.; Walker, W. W., and Green, R. A.: Histopathology of the Liver in Human Brucellosis, J. Lab. & Clin. Med. 34:40 (Feb.) 1949.

3. This boy was studied from the clinical material of Dr. Vernon Hart of Minneapolis.

was 3 years of age. His illness was also characterized by a long latent period between the time of the acute infection and the development of symptoms referable to his hip.[4] In this case six months elapsed following apparent recovery from the initial symptoms before the child began to limp and to complain of pain in the hip. A diagnosis of poliomyelitis was temporarily considered because of the severe muscle spasm about the involved right hip. There was rapid cessation of pain in the joint as well as muscle spasm coincident with the use of aureomycin, although cultures of the blood remained positive after treatment was completed. A recent report from his father, six months after the conclusion of therapy, stated he was in good health. He had received a second course of aureomycin at home.

Case 15 was an example of an unusual complication of brucellosis. The patient was an infant in whom a severe hypochromic microcytic anemia was observed. The main physical abnormalities were enlargement of the liver and spleen. By the fourth day of treatment with aureomycin the spleen had receded from 4 to 1.5 cm. below the costal margin and the liver was no longer palpable. Six weeks after completion of treatment the hemoglobin had risen from 8.7 to 10.9 Gm. per hundred cubic centimeters of blood.

In 2 patients there were complicating illnesses in addition to brucellosis. In case 14 chronic nephritis was present. This patient, a farmer aged 61, had been stricken by a partial hemiplegia of the left side, and at the time of treatment, one year after the cerebral accident, residual neurologic abnormalities were still found. There was some doubt as to the relation of brucellosis to the cerebral and renal complications. Before receiv-

TABLE 4.—*Clinical Data on 16 Patients with Brucellosis Due to Brucella Abortus and Treated with Aureomycin*

| Case | Age | Sex | Duration of Illness Before Treatment | Number of Positive Cultures | Complications | Previous Therapy | Total Dose | Side Effects | Results and Comments |
|---|---|---|---|---|---|---|---|---|---|
| 1 | 19 | M | 1 mo. | Blood 2 | Albuminuria, jaundice | None | 16.25 Gm. | None | Recovered from brucellosis and jaundice; pyuria and albuminuria persist after treatment; 8 negative blood cultures; well for 3 mo. |
| 2 | 12 | M | 12 mo. | Blood 1<br>Hip 1 | Arthritis of left hip | Penicillin and sulfadiazine | 28 Gm. in 14 days | None | Complete cessation of symptoms and observations referable to involved hip; no recurrence for 6 mo. |
| 3 | 3½ | M | 5 mo. | Blood 3 | Arthritis of right hip | None | 8.6 Gm. in 14 days | None | Clinical recovery but persistence of bacteremia and slight fever after treatment |
| 4 | 17 | M | 1 mo. | Blood 4 | None | None | 24 Gm. in 12 days<br>51 Gm. in 18 days | None<br>Epigastric pain | Became afebrile and asymptomatic after 3 days of treatment; remained well 1 mo., then became febrile again; 11 blood cultures negative after first course of aureomycin; complete recovery and no recurrence 5 mo. after second course of aureomycin |
| 5 | 36 | F | 1 mo. | Blood 2 | None | None | 32 Gm. in 14 days | None | Uneventful and complete clinical recovery; 3 negative cultures after treatment; no recurrence for 4 mo. |
| 6 | 25 | M | 1½ mo. | Blood 3 | None | Penicillin | 26 Gm. in 13 days | None | Complete clinical recovery; no recurrence 6 mo. |
| 7 | 33 | F | 7 mo. | Blood 4 | None | Vaccine | 25.6 Gm. in 14 days | Nausea, epigastric pain | Became afebrile on second day of treatment; blood culture still positive on eighth day of treatment but bacteremia, symptoms and fever had all ceased by end of treatment; no recurrence for 3 mo.; 4 cultures negative |
| 8 | 23 | M | 13 mo. | Blood 2 | None | None | 20 Gm. in 10 days | None | Afebrile after 48 hr.; clinically well 2 mo.; 3 negative blood cultures |
| 9 | 22 | M | 2 mo. | Blood 2 | None | None | 20 Gm. in 10 days | None | Recovered; no recurrence for 2 mo.; 6 negative blood cultures |
| 10 | 47 | M | 4 mo. | Blood 3 | None | Streptomycin 23 Gm. and sulfadiazine 90 Gm., 16 days | 28 Gm. in 14 days | None | Clinical recovery with aureomycin after unsuccessful therapy with streptomycin and sulfadiazine; no recurrence 6½ mo. |
| 11 | 29 | M | 3 wk. | Blood 1 | None | None | 20 Gm. in 10 days | None | Clinical recovery; no recurrence 3 mo.; 5 negative blood cultures |
| 12 | 21 | M | 1 wk. | Blood 5<br>Bone marrow 1 | Anchylosis | None | 20 Gm. in 10 days<br>20 Gm. in 10 days | Nausea, vomiting, diarrhea<br>None | Recovery from brucellosis and also from anchylosis; stools became free of trypanosites and blood, free of Br. abortus; 19 blood cultures negative after treatment, but symptoms and fever appeared 1 mo. after treatment; recovered with second course |
| 13 | 16 | M | 5 yr. | Blood 1 | None | Vaccine, sulfadiazine, streptomycin, penicillin | 37 Gm. in 16 days | Nausea, epigastric pain | Afebrile after 1 day; no recurrence 5 mo. |
| 14 | 60 | M | 1 yr. | Blood 5 | Hemiplegia; chronic nephritis | Streptomycin 16 Gm. and sulfadiazine, 11 days | 28.5 Gm. in 16 days | Indigestion, epigastric pain | Afebrile before therapy; improved 4 mo.; died suddenly of cerebrovascular accident |
| 15 | 1½ | M | 1 yr. | Blood 2<br>Bone marrow 1 | Anemia of infancy | None | 7.8 Gm. in 8 days | None | Decided gain in appetite, weight and energy in infant aged 18 mo. |
| 16 | 55 | M | 1 mo. | Blood 2<br>Bone marrow 1 | None | None | 22 Gm. in 11 days | None | Clinical recovery in an acutely ill patient |

4. This and the following patient were studied on the Pediatrics' Service of the University Hospitals, through the cooperation of Dr. Irvine McQuarrie.

ing aureomycin he had been treated with a combination of streptomycin and sulfadiazine. This produced some improvement, but Br. abortus was cultured from his blood on two occasions after this treatment was discontinued. Administration of aureomycin was followed by appreciable gain in strength and no recurrence of bacteremia. He died suddenly in a rural area six months after leaving the University Hospitals. An adequate postmortem examination was not performed.

Another patient, a veteran of World War II, was found to be passing large numbers of trophozoites and cysts of Endameba histolytica in his stools. In this case aureomycin not only acted against Br. abortus but also eliminated E. histolytica from the stools, the trophozoites rapidly disappearing and not returning during a period of observation of three months.

### RELAPSES

Brucella has been cultured from the blood of only 1 patient after treatment (case 3). The total dose of aureomycin was reduced to only 8.6 Gm. in fourteen days because the boy was only 3 years of age. In spite of the persistent bacteremia there was an excellent clinical response and, except for a slight fever, there were no signs of clinical relapse. It is possible that bacteremia persisted because an insufficient amount of aureomycin was given. A second course of aureomycin apparently eliminated the infection.

TABLE 5.—*Relapses Occurring in Patients Treated with Aureomycin for Infections Due to Brucella Abortus*

| Time Elapsed | Number of Cases | Clinical Relapse Only | Bacteriologic Relapse Only |
|---|---|---|---|
| 4 to 7 mo. | 6 | 0 | 0 |
| 2 to 4 mo. | 6 | 0 | 0 |
| Less than 2 mo. | 4 | 2 | 1 |
| Total | 16 | 2 | 1 |

Two patients became febrile and had other manifestations of clinical relapse after all symptoms had temporarily subsided (cases 4 and 12). Blood cultures from both patients remained sterile, although numerous attempts were made to isolate Brucella during the course of apparent relapse. In both cases there was reason to suspect that the recurrence of fever was caused by a process other than active brucellosis. In case 4, for example, pharyngitis developed and the patient had enlarged cervical lymph nodes which were suggestive of a primary infection of the pharynx. Cultures of material from the throat were negative for bacteria; heterophile antibodies and leukocytoid lymphocytes did not appear in the blood. In case 12 it could not be determined for certain whether the return of symptoms was caused by an exacerbation of the amebic infection or by the brucellosis. Neither organism was isolated. The symptoms were more characteristic of brucellosis and disappeared after a second course of aureomycin (20 Gm. in ten days).

Table 5 summarizes the results from the standpoint of bacteriologic and clinical failures or relapses. The clinical relapses both occurred within one month after the cessation of treatment, and the bacteriologic failure was discovered immediately.

### SIDE EFFECTS OF AUREOMYCIN

Aureomycin was well tolerated by the 16 patients. Only 5 patients complained of symptoms which might have been caused by the drug. These are summarized in table 6. Epigastric pain and nausea were experienced but were never so serious that aureomycin could no longer be given. In 6 patients an abrupt rise in temperature occurred during the first forty-eight hours of treatment. This phenomenon was previously noticed in 12 of 24 patients in México, D. F., who were treated with aureomycin for infections due to Br. melitensis; in the latter group the rise in temperature was sometimes accompanied with symptoms and signs of

TABLE 6.—*Side Effects Associated with the Oral Administration of Aureomycin in 16 Patients Treated for Brucellosis Due to Brucella Abortus*

| | |
|---|---|
| No side effects | 11 |
| Side effects | 5 |
| Epigastric | 4 |
| Nausea | 3 |
| Vomiting | 1 |

shock.[1] It appeared necessary to minimize these effects in the Mexican patients by reducing the first daily dose of aureomycin to 0.1 Gm. and then gradually increasing the dosage. In the present study, however, the early spike of fever was not associated with any distressing manifestations and there was no need to initiate treatment with small doses.

### COMMENT

Aureomycin has been of benefit, immediately and consistently, to all the 40 patients treated in Minneapolis or at the Hospital Generale in México, D. F. It appears to be dependable in the treatment of human brucellosis if the infection is caused by Br. melitensis or Br. abortus. Infections due to Brucella suis have also been treated with aureomycin, but the number of reported cases is small.[5]

A rough comparison can be made between the effectiveness of aureomycin and that of combined treatment with streptomycin and sulfadiazine. In table 7 two groups of 16 consecutive cases with treatment by each method are considered from the standpoint of clinical and bacteriologic relapses or failures. This comparison of aureomycin with a combination of streptomycin and sulfadiazine suggests that there is little difference in the over-all results in infections due to Br. abortus. In certain respects, however, the use of aureomycin is

TABLE 7.—*Treatment of Brucellosis Due to Brucella Abortus: Comparison of the Results Obtained Using Aureomycin with Those Obtained Using a Combination of Sulfadiazine and Streptomycin*

| | Aureomycin | Sulfadiazine-Streptomycin |
|---|---|---|
| Period of observation | 2 to 8 mo. | 2 to 14 mo. |
| Total number of cases | 16 | 16 |
| Number clinical relapses | 2 | 1 |
| Number bacteriologic relapses or failures | 1 | 3 |

unquestionably superior to the combined use of the other two drugs. Aureomycin produces almost immediate improvement in the subjective well-being of the patient and a rapid fall in temperature. Its oral administration is easy and free from dangerous side effects. Hospitalization is not necessary. Treatment with streptomycin and sulfadiazine has not been consistently attended by rapid improvement in symptoms or fever,

5. Bryer, M. S.; Schoenbach, E. B.; Wood, R. H., and Long, P. H.: The Treatment of Acute Brucellosis with Aureomycin, Bull. Johns Hopkins Hosp. 84:444, 1949. Schoenbach, E. B.; Bryer, M. S., and Long, P. H.: The Pharmacology and Clinical Trial of Aureomycin: A Preliminary Report, Ann. New York Acad. Sc. 51:267, 1948.

and the well known side actions may be serious. Would there be any advantage of combining aureomycin therapy with streptomycin or dihydrostreptomycin, or with sulfadiazine? Heilman [6] reported that the simultaneous administration of aureomycin and dihydrostreptomycin to experimentally infected mice reduced the numbers of Brucella organisms in the spleen more decidedly than did either agent alone. In observations made in this clinic Magoffin, Anderson and Spink [7] noted that the combination of aureomycin and streptomycin, and aureomycin and sulfadiazine, had a more pronounced anti-Brucella action in the chick embryo than did any one of the drugs when given alone. The only recorded observations in human subjects are those of Herrell and Barber,[8] who administered a combination of dihydrostreptomycin and aureomycin to 4 patients with brucellosis. Two of the infections were due to Br. suis and 2 were due to Br. abortus. A satisfactory response to this combination of drugs was noted, and it was concluded that aureomycin and dihydrostreptomycin should be employed in the treatment of human brucellosis, although control data on the use of aureomycin alone were not reported. The present study, as well as that conducted in México, D. F., indicates that in the routine treatment of infections due to Br. abortus or Br. melitensis little is to be gained by the additional use of dihydrostreptomycin, the administration of which is attended by inconvenience and discomfort for the patient as well as possible serious toxic effects.[9] Even if relapses do occur after an initial course of aureomycin, a second course of treatment can be given, often with success.

A daily dose of 2 Gm. of aureomycin administered over a period of ten days to two weeks was adequate for most patients. In case 1 there was complete recovery in an adult after a daily dose of only 1 Gm. given for eighteen days. The only example of bacteremia after treatment was case 3, in which the daily dose was reduced to 600 mg. for two weeks. Although this was the smallest quantity of aureomycin taken by any patient in this series, the amount per kilogram of body weight was more than that given to others (the patient was a small child weighing 30 pounds, 13.6 Kg.). In a previous report it was suggested that a daily dose of 4 to 6 Gm. of aureomycin might be desirable for treating infections due to Br. melitensis.[2] In most cases in which the infection is due to Br. abortus or Br. melitensis there is probably no advantage in giving more than 2 Gm. of the antibiotic a day.

### SUMMARY AND CONCLUSIONS

1. Aureomycin was used in 16 bacteriologically proved cases of brucellosis due to Brucella abortus. Rapid and striking clinical improvement occurred in all patients after treatment. Bacteremia persisted after treatment in only 1 patient, and a clinical relapse occurred in 2 others.

2. Aureomycin is now known to be effective in the treatment of human brucellosis due to Br. abortus and Brucella melitensis.

6. Heilman, F. R.: The Effect of Combined Treatment with Aureomycin and Dihydrostreptomycin on Brucella Infections in Mice, Proc. Staff Meet., Mayo Clin. **24**: 133, 1949.

7. Magoffin, R.; Anderson, D., and Spink, W. W.: Therapy of Experimental Brucella Infection in the Developing Chick Embryo: IV. Therapy with Aureomycin, J. Immunol. **62**: 125, 1949.

8. Herrell, W. E., and Barber, T. E.: The Combined Use of Aureomycin and Dihydrostreptomycin in the Treatment of Brucellosis, Proc. Staff Meet., Mayo Clin. **24**: 138, 1949.

9. Allison, S. T.; Volk, R., and Vitagliano, G. R.: Dihydrostreptomycin in the Treatment of Pulmonary Tuberculosis with Particular Reference to Its Toxicity As Compared with that of Streptomycin, New England J. Med. **241**: 52, 1949.

## LESIONS OF THE SHOULDER

WILLIAM S. TEGNER, M.R.C.P.
London, England

Many patients complain of pain in the shoulder, but in any pain, diagnosis must precede treatment. Shoulder pain presents a diagnostic problem which must be approached by the routine path, the careful recording of the history of the patient, followed by physical examination and special investigation where necessary. I have recently found instances in which the patient's own complaint of shoulder pain has been accepted without investigation, and physical therapy has been directed to it although the primary cause of the pain has lain outside the shoulder. Similarly, I have read in a so-called textbook the statement that one should accept the syndrome of the painful shoulder without considering the underlying pathologic condition which is causing the pain and that he should prescribe treatment on this basis. Such a statement allows one to form an opinion of the author and his book.

The causes of shoulder pain can be divided between those which lie in the anatomic structures connected with the shoulder joint and those which lie outside these structures. In England we speak of fibrositis of the periarticular tissues of the shoulder joint. This I regard as a generic term which can be used far too loosely and which often covers a multitude of conditions. The commonest lesion of this type in the shoulder is a subdeltoid or subacromial bursitis which may or may not be associated with a lesion of the supraspinatus tendon. This lesion is frequently traumatic in origin, and in some cases calcareous deposits form in the supraspinatus tendon or in the bursa. The patient complains of pain in the shoulder which is relieved by rest but aggravated by movement, especially the movement of abduction. Elevation may be difficult, and active elevation farther than 90 degrees may have to be carried out by an external rotatory movement, which is typical of a lesion in the supraspinatus tendon. In this condition of bursitis, roentgen examination may reveal nothing, or, in other cases, calcareous deposits may be seen in the supraspinatus tendon. There are other conditions affecting the muscles around the shoulder joint, among them true fibrositis, which may be toxic, traumatic or infectious in origin. In these cases it is probable that immobilization due to pain is often the primary cause of secondary fibrositic changes. The symptom will be pain on movement of the shoulder, which initially may be aggravated but later will be relieved by activity. In long-standing cases there will be limitation of movement.

I think it is important to realize that primary arthritis of the shoulder joint is a rare condition. The shoulder is commonly affected in a general rheumatoid arthritis, but in these cases the shoulder is part of a much larger problem. Osteoarthritis of a shoulder joint is uncommon, for it is not a weight-bearing joint and is not subjected to the stress and strains of joints such as the hip and knee. Many of the movements carried out at the shoulder joint involve drawing the head of the humerus out of the glenoid cavity and thereby separating the joint surfaces. Thus osteoarthritis is not likely to occur. Osteoarthritis may occur at the acromioclavicular joint. This is an uncom-

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mon condition in which pain is referred to the acromioclavicular region and is aggravated by movement at this joint; radiologic examination will confirm the diagnosis of osteoarthritis. Primary arthritis of the shoulder joint frequently may be diagnosed, but it is not a common condition.

The intrinsic conditions of the shoulder which I have mentioned all share one common end result: if they are neglected they may rapidly develop into the frozen shoulder. In this condition the capsule of the shoulder joint becomes thickened, shortened and adherent to tissues and bone surface. Any movement of the shoulder causes pull on this pathologically thickened capsule, and pain results. Pain causes the patient to desist from movement, and thus a vicious circle is established in which prolonged rest causes adhesions; adhesions cause pain, and pain calls for rest.

Extrinsic conditions which secondarily affect the shoulder joint are commonly met in practice. I would list brachial neuralgia as first of these. In England this is a common syndrome, but after discussing it with my American colleagues I am under the impression that it is not so common here. It is often manifested as a pain in the region of the shoulder and because of this is often erroneously diagnosed. It may be caused by cervical osteoarthritis, protrusion of a cervical intervertebral disk or, much more commonly, to pull on the brachial plexus caused by drooping of the shoulder girdle, a type of lesion known as the scalenus anticus syndrome. A cervical rib may cause it, but this is not usual. In brachial neuralgia the pain radiates anatomically along the distribution of the affected nerve roots and is particularly liable to occur while the patient is at rest and during the night, in contradistinction to the pain of bursitis and fibrositis. In the early stages of brachial neuralgia movement may be full and may not evoke the typical pain.

Another important cause of secondary shoulder pain is trauma anywhere in the upper limb when it is being treated by absolute rest of the whole limb. The sling in which the patient carries an arm which has suffered a fractured radius may be an important cause of a frozen shoulder, for the shoulder joint will soon become fibrotic if it is not moved. Formerly one saw more patients in whom injury or infection of a finger, or a fracture in the region of the wrist, had led to stiffness of the elbow and fixed adduction of the shoulder. A trap into which the unwary may fall is demonstrated by the patient in whom cardiac pain is referred to the shoulder. In my clinic every year a few patients with angina caused by effort are sent along with a request for physical therapy. It is most important in these cases that the true cause of the pain be recognized.

Again one must stress the fact that the extrinsic, as well as the intrinsic, causes of shoulder pain can be responsible for a frozen shoulder. This must be borne in mind when prescribing treatment.

In the treatment of all intrinsic lesions of the shoulder joint, one aims at the eventual restoration of full and painless movement. Such an aim entails certain fundamental principles in the prescription of treatment, and these principles can be applied, whatever the etiologic nature of the lesion. First, the shoulder must not be allowed to remain for long at rest in adduction; second, the patient's own efforts must be directed toward maintaining voluntary movement of the muscles acting around the joint, and also toward maintaining the tone of these muscles. The correct position of rest for a painful shoulder is in abduction, and it is in this position that the shoulder joint must be splinted if splinting is necessary. At the same time, active muscular contractions must be encouraged.

In lesions of the subdeltoid bursa and the supraspinatus tendon, heat is valuable for its effect in restoring and improving the circulation and in soothing pain. The increased vascularity resulting from heat therapy can cause the absorption of calcareous deposits in the supraspinatus tendon. It can be most gratifying to see, in serial roentgenograms, such deposits gradually disappearing. In the majority of cases the intrinsic shoulder lesions respond well to physical therapy; however, a shoulder already limited in motion, in which fibrous adhesions have formed, may call for patience and persistence on the part of the physician and physical therapist and for courage and perseverance on the part of the patient in stretching and breaking down his own adhesions. Faradization, roentgen therapy, hydrotherapy and, in a small proportion of cases, manipulation with the patient under general anesthesia may be necessary. Again it is important to remember that the position of rest for the shoulder after manipulation should be abduction. Injections of agents for local anesthesia are often of value in relieving pain and may thereby assist in breaking a vicious circle. In some cases of supraspinatus tendinitis which do not respond to more conservative forms of treatment the orthopedic surgeons may go so far as to remove the acromion. I know patients who have responded well to this maneuver when all else has failed.

In treatment of the extrinsic lesions which may cause freezing of the shoulder joint the same principles of maintaining abduction of the shoulder must be followed. The treatment of brachial neuralgia, a condition met frequently in England, depends largely on the cause. Thus, a brachial neuralgia resulting from the protrusion of a cervical intervertebral disk or from cervical osteoarthritis will need treatment directed at the source of pain, and the patient complaining of pain in the shoulder and arm may be surprised to find treatment with short wave diathermy prescribed for the neck. But this can prove most effective, and its effect is enhanced if active exercise is prescribed at the same time. In the scalenus anticus syndrome heat and shoulder-raising exercises combined with the judicious administration of analgesic drugs proves successful in most cases. It is the exception rather than the rule that such patients must be subjected to operative procedures.

In treating patients suffering from trauma of the upper limb, the situation must be explained, and the dangers of allowing the shoulder to become stiff must be made clear. Now that plaster has replaced the wooden splint and the supreme value of active exercise is understood, one does not see secondary stiffness of the shoulder as often as formerly, but there is still danger, when a sling is used, that the local lesion may resolve satisfactorily but the patient may be left with a stiff and painful shoulder.

## SUMMARY

The shoulder is a vulnerable joint which may be affected by both intrinsic and extrinsic factors. The fundamental objectives in treatment are to relieve pain and to maintain movement and musculature while the painful condition is being cured. The danger that a stiff and painful frozen shoulder may result must always be borne in mind.

## ABSTRACT OF DISCUSSION

DR. SVEND CLEMMESEN, Copenhagen, Denmark: It is necessary to evaluate all the different causes of pain in the shoulder and then to make a diagnosis and select the treatment for each case. This specialty of physical medicine and rehabilitation is not so uncommon. It has a central place in medical practice. Liaison is needed between physical medicine and rehabilitation. It has been impossible for me to translate the word rehabilitation into the Danish language. Since this new concept was born in the United States and Great Britain, I think we will keep the word rehabilitation.

DR. BJÖR THORSSON, Orange, N. J.: This is one of the best papers on lesions of the shoulder that I have ever encountered. At a conference on the shoulder which I attended recently, extremely confusing nomenclature was used. I want to make a plea for extremely close study of shoulder conditions and an exact diagnosis in each case. Twenty years ago in most of the cases referred to me the diagnosis was neuritis. Later it became popular to make a diagnosis of bursitis. Today there are in my files thirty-five different types of shoulder conditions. The term frozen shoulder was first used by Dr. Codman in his book, "The Shoulder," a standard textbook in the United States. He stated that the term frozen shoulder should be used as synonymous with periarthritis humero scapularis, as described by Duplay. I think physicians should reserve that term for the condition described by Duplay in his paper published in 1872. To my mind it is a specific clinical entity. That term should not be used for stiff shoulders which result from trauma, bursitis or peritendinitis calcarea. If there were a uniform nomenclature, greater progress in the treatment of shoulder conditions would rapidly be made.

DR. NICHOLAS MAURIELLO, Wilkes-Barre, Pa.: I would like to ask Dr. Tegner whether his experience with ionization of iodine, procaine hydrochloride and histamine has been satisfactory in the treatment of bursitis. If physicians are going to prescribe active movements for these patients, salicylates and codeine will have to be given to them.

DR. G. HIRSCHBERG, Bronx, N. Y.: I should like to ask Dr. Tegner two questions concerning shoulder pain in patients with myocardial infarction. First, is it possible to relieve this pain by physical treatment, and, if so, which modality should be applied? My other question concerns the prevention of a frozen shoulder in these cases. Early active and passive motion may be contraindicated because of the cardiac status. Should immobilization in abduction be used?

DR. HOWARD A. RUSK, New York: So-called pulley therapy has been extremely valuable in the management of these shoulder problems, especially in the hemiplegic person. The patient, knowing his own threshold with pulley therapy, will proceed much faster with active motion than if the work is done by a physician or a physical therapist.

One danger in the scalenus anticus syndrome is illustrated by a case in which I was consulted; the patient was on the operating table, just having had the muscle severed. The tension is so great that when the muscle is cut it will often snap like a violin string. This patient went into shock on the operating table. No cause could be immediately seen, but within two hours his heart was displaced to the right and the aspiration needle in the chest brought out a milky fluid. It was obvious then that the thoracic duct had been severed by the snap of the muscle. With repeated thoracenteses over a period of several days the duct closed, and the patient made an uneventful recovery. However, this is a difficult and frightening situation.

DR. TEGNER, London, England: I agree with Dr. Rusk about the value of pulley therapy; it fits in well with my advocacy of the patient's own efforts. In treating these lesions with such procedures as pulley therapy, the physician must encourage the patient and tell him that he must endure a certain amount of pain if he wants to get restoration of function. Of course, codeine and salicylates must be administered. With the exception of the histamine-like substances, I have not found iontophoresis a particularly helpful procedure. If I want to give procaine hydrochloride, I use the needle rather than ionization. However, for increased vascularity histamine iontophoresis may be valuable. Dr. Hirschberg made an important point when he stated that I had mentioned myocardial conditions and had not bothered about them much further. These patients who are referred to us with cardiac pain are in danger that a secondarily fibrosed shoulder may develop. I do not use the term frozen shoulder in this condition. These patients must be treated on an individual basis. I do not put them into the large therapy groups for exercise. Normally, exercises are given for groups of 10 or 15 patients, who are encouraged in competition with each other in enjoying their exercises. That is out of the question in regard to the patients with cardiac disease, for whom treatment must be carried out individually and carefully, under strictly controlled conditions. But they must be given treatment. In regard to relief of cardiac pain, I believe that one cannot help particularly, other than by administration of glyceryl trinitrate and similar drugs. In my own hospital, the wards where the tuberculous patients are treated are visited every day by a physical therapist under my direction. These patients do exercises in which we try to combine group methods and individual methods. One cannot institute a strong program of breathing exercises, but the patients are treated with physical therapy, which starts with gentle hand and finger movements. It is a routine, but the local treatments must be prescribed with the greatest care and, possibly, with conservatism.

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# AEROBACTER AEROGENES INFECTION OF THE URINARY TRACT

### Effective Treatment with Aureomycin

SEYMOUR F. WILHELM, M.D.
WALTER A. SCHLOSS, M.D.
LAZARUS A. ORKIN, M.D.
ERICH SELIGMANN, M.D.
and
MICHAEL WASSERMANN, M.D.
New York

A remarkable sudden increase in the incidence and pathogenicity of Aerobacter aerogenes (Bacillus lactis aerogenes) in the genitourinary tract was reported from the Beth Israel Hospital by Wilhelm and Orkin[1] in 1948 (published in 1949). At that time this organism was found, either in pure form or in association with other organisms, in the urine of 49.2 per cent of 257 consecutive patients admitted to the urologic service. Studies made subsequently by us in 100 consecutive admissions revealed that A. aerogenes was present in the initial urine cultures of 50 per cent of these patients and that the organism was recovered in later cultures in 75 per cent of the patients at some time during their hospital stay. Bacteremia caused by A. aerogenes was proved in 24 patients, 7 of whom died. In one of the fatal cases, suprapubic prostatectomy was complicated by an acute bacterial endocarditis.[2] At autopsy, cultures of material both from the prostate and from vegetations on the aortic valve showed a pure growth of A. aerogenes.

Almost all the patients with A. aerogenes infection of the urinary tract suffered from related symptoms. The organism was frequently recovered in pure culture from the infected organ at the operating table

This study has been aided by a financial grant from Mr. Joseph Jacobs.

From the Urological Surgical Service and the Laboratories, Beth Israel Hospital.

1. Wilhelm, S. F., and Orkin, L. A.: The Increased Pathogenicity of Bacillus Lactis Aerogenes in Urinary Tract Infections, J. Urol. 61: 131, 1949.

2. Sussman, L. N.; Cohen, I. B., and Freund, A. V.: Acute Aerobacter Aerogenes Endocarditis Complicating Genito-Urinary Tract Infection, N. Y. State M. J., to be published.

from excised surgical specimens or, later during the postoperative course, from infected wounds. We have also observed that several patients in whom epididymitis developed following prostatectomy did not respond to the usual conservative therapy, but instead the condition became suppurative. Cultures of material removed at operation revealed growth of A. aerogenes. Three patients with bacteremia caused by A. aerogenes were cured by excision of an infected renal focus.

These observations afford ample proof that A. aerogenes is now usually pathogenic in the genitourinary tract, often giving rise to grave, and at times fatal, infection. This problem has not been confined to one hospital or city. Since the initial observations were reported, we have been informed of similar experiences in other clinics throughout the country. In a series of persons with paraplegia Owen and Finch [3] recently found that 62.4 per cent had A. aerogenes urinary infection.

The importance of discovering an efficacious drug for the eradication of A. aerogenes infection of the urinary tract needs little further emphasis. Contrary to most early reports in the literature, one of us (E. S.) found that 85 per cent of the strains of A. aerogenes cultured at the Beth Israel Hospital were resistant to streptomycin. Except for infection caused by the remaining small number of streptomycin-sensitive strains, specific treatment was not available. Most of the commonly used drugs (penicillin, sulfadiazine, sulfacetimide, sulfamerazine, NU-445 [3,4-dimethyl-5-sulfanilamido-isoxayole] and methenamine mandelate [mandelamine®]) had been tried, singly and in combination, with little if any success.

The evaluation of successful management of infections of the urinary tract obviously depends on careful bacteriologic studies. During our experiments with various antibiotic and chemotherapeutic agents, we have made urine cultures prior to the beginning of treatment, every other day during the course of treatment and at frequent intervals during the follow-up period. Two sterile cultures after the conclusion of therapy were the minimal criteria of cure.

## CLINICAL EXPERIMENTS

*Sulfathiazole.*—During the years 1940 to 1941 we studied 12 patients with A. aerogenes infection of the urinary tract. Each patient had received sulfathiazole, and in each the organism disappeared in six months to seven years. Because of this observation, 18 patients with infection due to A. aerogenes were treated by administration of sulfathiazole in a dosage of 1 Gm. four times daily for at least seven days. There were four successes and fourteen failures; 22 per cent were cured.

*Sodium Mandelate.*—Carroll and his associates [4] found that A. aerogenes was sensitive to a 0.1 per cent concentration of mandelic acid, and at his suggestion we treated 43 consecutive patients with intravenous injections of sodium mandelate. Twenty-five cubic centimeters of a 20 per cent solution of this drug was administered daily for a period of five to seven days. About one third of the patients received an additional daily injection with no appreciable change in the results. Seventeen of the 43 patients (40 per cent) were cured bacteriologically, whereas the remaining 26 were unaffected by the therapy. Although toxic manifestations were not encountered, the intravenous injection of sodium mandelate has the disadvantage of requiring hospitalization and considerable medical and nursing care. A good venous system is required, and phlebitis was not uncommon among patients receiving sodium mandelate therapy.

*Methenamine Mandelate.*—Fifty patients with persistent A. aerogenes urinary infection were treated with methenamine mandelate. Four tablets of the drug were administered four times daily for as long as five weeks. The patients were instructed to follow an acidifying diet.

The results of the methenamine mandelate therapy were somewhat more encouraging. Of the 47 patients who could be followed, 23 (49 per cent) became free of A. aerogenes on repeated urinary culture.

It was necessary to continue the administration of the drug for a long while, five weeks in some cases, in order to inhibit growth of the organism in the urine. A. aerogenes did not develop resistance to methenamine mandelate even after such long periods of administration, which confirms the findings of Scudi and Duca.[5]

*Aureomycin.*—Early in 1949, aureomycin became available and was tried in an initial series of 23 unselected consecutive cases of persistent A. aerogenes infection of the urinary tract. Five hundred milligrams of aureomycin was administered four times daily for four days. The immediate clinical response was excellent in 21 of the 23 cases. Toxicity was minimal, the only symptom being slight nausea, with occasional vomiting or diarrhea. The administration of aluminum hydroxide gel tended to ameliorate the gastrointestinal disorders.

The results following the administration of aureomycin were often spectacular. Patients who had suffered from severe pyuria for a long time voided clear urine within twenty-four to forty-eight hours. In 1 of these cases, that of a diabetic patient with a neurologic condition affecting the bladder, the pyuria was cleared despite the constant presence of residual urine.

### REPORT OF CASE

The patient, a 57 year old man with a mild case of diabetes, entered Beth Israel Hospital Aug. 13, 1948 with a history of severe dysuria, tenesmus and urgency. Prior to admission, the bladder had been greatly distended. Forty-two fluid ounces (1242 cc.) of purulent residual urine were evacuated, and the catheter was left indwelling. On August 19 the catheter was removed, and the patient was able to void. On the next day, however, the patient again suffered from acute retention of urine, accompanied by chill and fever. Suprapubic cystostomy was performed that same day. The postoperative course of the patient was uneventful, and he left the hospital with a cystostomy tube.

The patient reentered the hospital October 5, and two days later a transurethral resection of the neck of the bladder was performed. The postoperative course was smooth, and the suprapubic tube was removed on the fifth postoperative day. The patient was able to void well, and had a healed suprapubic wound when he left the hospital. However, the pyuria persisted and was accompanied by residual urine, varying between 3 and 12 fluid ounces (89 and 355 cc.). Repeated urine cultures during the hospital stay and after discharge showed persistent growth of A. aerogenes. The pyuria was

3. Owen, S. E., and Finch, E. P.: Bacteriological Study of Urine from Paraplegic Patients, J. Urol. **61**:258, 1949.

4. Carroll, G.; Allen, H. N., and Doubly, E. R.: Study of Bacillary Infections of the Urinary Tract, J. A. M. A. **135**:683 (Nov. 13) 1947.

5. Scudi, J. V., and Duca, C. J.: Some Antibacterial Properties of Mandelamine (Methenamine Mandelate), J. Urol. **61**:459, 1949.

in no way affected by the administration of penicillin, streptomycin, sulfadiazine or methenamine mandelate.

On Jan. 24, 1949 the urine was milky and purulent. Urine culture still exhibited the growth of A. aerogenes. Aureomycin was administered orally in doses of 500 mg. four times daily. On the following day, the urine was clear and microscopic examination revealed only a few white blood cells. The administration of aureomycin was continued in this dosage for thirteen days. The urine has remained clear to the present time (July 1949), and repeated cultures have not shown growth of any organisms.

### RESULTS

The clinical response was excellent in 21 of the first 23 cases studied. The 2 patients whose urine cultures showed continued growth of A. aerogenes after a single course of aureomycin therapy were treated with repeated courses of this drug, and both were cured of the infection.

However, the longer the 21 patients who had been initially cleared of their A. aerogenes infection were followed, the more instances of recurrence were found. The infection due to A. aerogenes recurred in 15 patients (71 per cent). In 2 cases it reappeared after a free interval of about two months. Eight of the 15 patients with recurrences were again treated by administration of aureomycin and were once more cleared of their infection. These patients were, for the most part, treated with smaller doses, 50 mg. of the drug being administered four times daily until a total of twenty-five 50 mg. capsules had been taken.

Because of these encouraging results, the study was increased to include 27 additional cases. Similar results were obtained: the initial clinical response was good, but there were frequent bacteriologic recurrences, some of which cleared again after retreatment. In no case were any significant toxic symptoms observed, nor was resistance to aureomycin developed by A. aerogenes in any treated patient.

### SUMMARY

The effect of various drugs (sulfathiazole, sodium mandelate, methenamine mandelate [mandelamine®] and aureomycin) in the treatment of persistent Aerobacter aerogenes infection of the urinary tract was compared.

Aureomycin proved most consistently efficacious. In a series of 50 cases, the immediate clinical response was excellent in 42 (84 per cent). However, there was a large incidence of recurrence (43 per cent), in some instances as late as two months after the administration of aureomycin was discontinued. Additional courses of aureomycin therapy, however, sterilized the urine in most of the recurrent cases.

Aerobacter aerogenes infection of the urinary tract is probably best treated by a single intensive course (500 mg. of aureomycin four times daily for four days) followed by an additional lesser course (50 mg. four times daily for four days). If recurrence takes place, aureomycin should be readministered until a cure is effected.

Experience with aureomycin suggests that its action is bacteriostatic, not bactericidal. No strains of A. aerogenes developed resistance to aureomycin, and no significant toxic symptoms were seen in this series of 50 patients.

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150 East Seventy-Third Street.

# A SIMPLIFIED CAFFEINE GASTRIC TEST MEAL FOR THE DIAGNOSIS OF PEPTIC ULCER

VERN H. MUSICK, M.D.
HOWARD C. HOPPS, M.D.
H. THOMPSON AVEY, M.D.
and
ARTHUR A. HELLBAUM, M.D.
Oklahoma City

A simplified caffeine gastric test meal[1] is reported at this time to fulfil the need for a practical test which may be used as a diagnostic procedure in evaluating the status of the patient with suspected peptic ulcer.

### METHOD

*Aspiration of Gastric Juice.*—The patient reports to the office at 8 a. m. after having fasted a minimum of twelve hours. In addition, he has refrained from brushing his teeth or smoking and has avoided mental stress and emotional excitement.[2]

A Levine tube is passed gently through a nostril into the stomach, and the entire gastric content evacuated and measured; a 10 cc. sample is tested for free and total hydrochloric acid. Six minutes later, aspirations are again commenced and continued for 4 minutes.

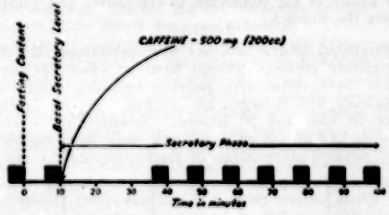


Fig. 1.—Schema illustrating method of fractional test meal. Aspirations are performed during periods (each of four minutes' duration) indicated by solid blocks.

The amount of free and total hydrochloric acid which has accumulated during this 10 minute period approaches the basal secretory level and serves as a base line (fig. 1).

At this time, 500 mg. (7½ grains) of caffeine sodium benzoate, in 200 cc. of distilled water at room temperature, is introduced slowly through the tube into the stomach. This solution is left in contact with the gastric mucosa for 30 minutes, at which time the entire gastric content is evacuated, measured, and a 10 cc. sample tested for free and total hydrochloric acid. Aspirations are then performed at 10 minute intervals for 60 more minutes, for 4 minutes during the latter part of each 10 minute period. Each sample is measured and titrated immediately. As a simplified office procedure, all the specimens secreted in response to the caffeine stimulus may be pooled, thoroughly mixed, their volume measured, and a single 10 cc. sample titrated for total acidity.

From the Departments of Medicine, Pathology and Pharmacology of the University of Oklahoma School of Medicine.

1. (a) Roth, J. A.; Ivy, A. C., and Atkinson, A. J.: Caffeine and "Peptic" Ulcer, J. A. M. A. **126**:814 (Nov. 25) 1944. (b) Musick, V. H.; Avey, H. T.; Hopps, H. C., and Hellbaum, A. A.: Gastric Secretion in Duodenal Ulcer in Remission: Response to the Caffeine Test Meal, Gastroenterology **7**:332, 1946.

2. Wolf, S., and Wolff, H. G.: Evidence on the Genesis of Peptic Ulcer in Man, J. A. M. A. **120**:670 (Oct. 31) 1942.

To completely evacuate the stomach, aspiration must be done with the patient in various positions: on the left and right sides, prone and supine, sitting, standing, bending from side to side, forward and backward and with moderate deep breathing. During these periods of aspiration, the tube is moved gently up and down. The patient must expectorate his secreted saliva,[3] and great care must be taken to prevent ballooning of the stomach with air or traumatizing the mucosa by overvigorous aspiration.[4]

*Titrations.*—Ten cubic centimeter samples of gastric juice are titrated with freshly prepared or stabilized $\frac{1}{36}$ normal sodium hydroxide (20 Gm. in 18 liters of distilled water), using standard Töpfer's reagent ($p_H$ 3.5) and phenolphthalein ($p_H$ 8.5) as indicators. The hydrochloric acid may be readily expressed in terms of milligrams of the acid, since 1 cc. of $\frac{1}{36}$ normal sodium hydroxide will neutralize 1 mg. of hydrochloric acid. The buret reading divided by 10 gives the amount of acid per cubic centimeter of gastric juice. This, multiplied by the total number of cubic centimeters in each specimen, gives the total amount of hydrochloric acid, expressed in milligrams (free and total) secreted during each test period. As Roth, Ivy and Atkinson have emphasized,[1a] the accuracy of a fractional test meal of this type is largely dependent on the ability of the technician to completely and gently empty the stomach.

## RESULTS

Fractional gastric analyses were performed on 108 ambulatory patients selected from an office practice. These were consecutive patients receiving extensive laboratory and roentgen ray studies. In this group were 58 men and 50 women. Seventy-four of the patients had no evidence of peptic ulcer from the history, physical observations or roentgenographic examination. Twenty-two of the 108 patients gave a definite history of peptic ulcer and had positive roentgenographic evidence of duodenal ulcer. A third group, of 12 patients, presented a history of the pain–food relief syndrome and responded well to Sippy management, but these patients had no definite roentgenographic evidence of duodenal ulcer. However, some of them exhibited mild gastric retention and other suggestive symptoms, such as eccentric pyloric rings, spasm of the duodenal or prepyloric areas and deep contraction waves.

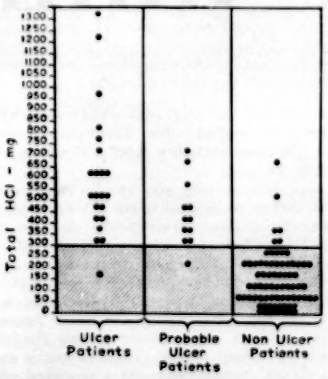


Fig. 2.—Scattergraph of total hydrochloric acid secreted by each of 108 patients during the ninety minute test period.

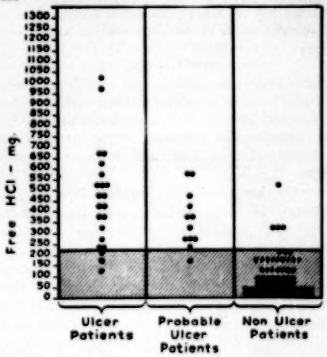


Fig. 3.—Scattergraph of free hydrochloric acid secreted by each of 108 patients during the ninety minute test period.

A scattergraph of the amount of total hydrochloric acid secreted by each of these 108 patients is presented in figure 2. It is apparent that only 6 of the control group of 74 persons secreted more than 300 mg. of total acid during the one and one-half hour secretory phase. In contrast to this, 32 of the 34 ulcer patients secreted more than 300 mg. of total acid.

Figure 3 represents a scattergraph of the amount of free acid secreted by these 108 patients. The level of free acid at which the ulcer group is most clearly separated from the nonulcer group is approximately 225 mg. of hydrochloric acid. The separation here is not quite as distinct as that shown in figure 2, based on total acid secreted.

## COMMENT

The relationship of high acid values to peptic ulcer has been questioned by many investigators. This is probably due to the use of a low stimulatory type of test meal such as that described by Ewald. It is reasonable to assume that response to a potent secretagogue would more nearly reveal the true potentialities of the gastric secretory mechanism. Caffeine is a powerful secretagogue, the secretory reaction to which has been well standardized in both animals and man. It has advantages over histamine in that it is free from dangerous side reactions and is more easily administered. The $p_H$ of caffeine solution does not significantly alter the gastric absorptive mechanism. It is clear and colorless and therefore permits easy and accurate titrations.

Another important deficiency of the conventional type test is that it fails to give any indication of the amount of hydrochloric acid secreted; only concentration of the acid is expressed in clinical units or milliequivalents. The test described here is superior in that it reveals concentration of acid and, in addition, the total amount of hydrochloric acid secreted (in milligrams) and the total volume of gastric juice aspirated during a standard of time.

3. Ihre, B.: Human Gastric Secretion, Acta med. Scandinav. (supp.) 98:1, 1938.

4. Besborodko, A., and Voronova, V. A.: A Comparative Evaluation of the Action of Mechanical and Chemical Stimuli on the Function of the Gastric Glands; cited by Babkin, B. P.: Secretory Mechanism of the Digestive Glands, New York, Paul B. Hoeber, Inc., 1944, p. 788.

As we have previously stated, it is probably the concentration (corrosive activity) of hydrochloric acid which is the major factor in producing or continuing the ulcerating process in peptic ulcer.[1b] As far as the histogenesis of peptic ulcer is concerned, it is probably the relation between mucosal resistance, mucous protection and concentration of acid which is most important. From the data presented here, it appears that the amount of hydrochloric acid that is secreted does play an important role in the causation of peptic ulcer. It certainly is of importance in the diagnosis.

The test which has been described represents a more practical and precise means of detecting the hypersecretion of hydrochloric acid which is commonly exhibited by the ulcer patient and which is characteristic of his disease.

SUMMARY

A simplified caffeine gastric fractional test meal is presented, which is suitable for office practice and which gives superior data in that it allows the determination of the total amount of hydrochloric acid that is secreted and the expression of the result in milligrams. The test is of diagnostic significance and is of particular value in the differentiation of ulcer patients from nonulcer patients.

Over 90 per cent of 34 ulcer patients secreted more than 300 mg. of hydrochloric acid during the ninety minute test period, whereas less than 10 per cent of 74 nonulcer patients secreted 300 mg. of hydrochloric acid during a similar period.

## Clinical Notes, Suggestions and New Instruments

### ARTERIOVENOUS ANEURYSM OF UTERINE ARTERY AND VEIN

ROLAND P. REYNOLDS, M.D.
CLARENCE I. OWEN, M.D.
and
MEYER O. CANTOR, M.D.
Detroit

The development of an arteriovenous aneurysm between the uterine artery and vein is extremely rare. In the 2 cases that have been previously reported, the emphasis appears to be rather on the extensive and large tortuous varices that result when the arterial blood is unnaturally shunted directly into the venous system than on the arteriovenous aneurysm. This is evident when it is noted that both case reports have as their titles, "Cirsoid Aneurysm of the Uterus." Dubreuil and Loubat [1] described the first case in 1926, and Graves and Smith [2] reported the second case in 1927. It is difficult to believe that other such cases have not been noted by gynecologists or surgeons, but a survey of the literature has failed to reveal them. It is possible that some case reports may be in the *Quarterly Cumulative Index Medicus* under titles that do not lend themselves well to a search for literature on this subject.

#### REPORT OF CASE

*History.*—E. P., a white woman aged 42, was admitted to the Grace Hospital on Feb. 14, 1949 complaining of headaches at her menstrual periods. She had first noted the onset of the headaches about four months earlier. The pain, which was severe, was generalized over her entire head and occurred with her menses. Her menses had always been regular and continued to be so. During the past four months she had complained of a progressively increasing tiredness in her right leg associated with a sensation of numbness in the calf. The sensation of numbness of the right calf was intermittent, being of one week's duration. In the intervals between such episodes of numbness her leg felt normal.

*Past History.*—The patient had diphtheria at 9 years of age, tonsillectomy and adenoidectomy in 1930, and an appendectomy in 1944. Headaches or vertigo had not occurred prior to the onset of the present illness. The eyeballs had been sore for the past six months; vision was excellent. Examination of ears, nose and throat revealed normal conditions. There had been albuminuria associated with ankle edema and an elevation of blood pressure following an acute infection of the upper part of the respiratory tract two years ago. This had cleared up in one week and had not recurred. Neuromuscular examination did not reveal numbness or tingling, anesthesia or paresthesia, ataxia or dyssynergia. Catamenia had begun at age 15 and had been regular, except for periods missed in May and June of 1948. The next period came in the early part of July. Then another period came six days later, at the end of July. Six weeks later, in mid-September, there was a normal period. They had then occurred normally every twenty-six days. The flow was moderate, and the periods were of four days' duration. The patient's husband and her 15 year old son were alive and well. She had had one miscarriage, in 1935. The balance of the history was noncontributory.

*Physical Examination.*—The patient lay in bed without apparent discomfort and did not appear to be acutely ill. The temperature was 98 F., the pulse rate 90 and the respiratory rate 20. The eyelids were erythematous, and the pupils were equal and regular and reacted to light and accommodation. There was no nystagmus or diplopia. The blood pressure was 102 systolic and 58 diastolic. A soft systolic murmur in the aortic area was transmitted to the neck and along the left sternal border to the apex. The abdomen was soft, without masses or spasm. Pelvic examination disclosed that the uterus was enlarged and soft. On palpation it felt like a pregnant uterus. The balance of the physical examination revealed essentially normal conditions. The reaction to the Friedman test for pregnancy was negative on two occasions, three weeks prior to admission and again after admission to the hospital. Results of urinalysis were normal.

*Operation and Course.*—On Feb. 3, 1949, a diagnostic dilatation and curettage was scheduled. With the patient under gas and ether anesthesia the cervix was examined. It was found to be rather soft. As soon as the Hegar dilator was inserted into the cervical canal to dilate it for curettage, a tremendous outpouring of bright red blood began. An attempt to curet the uterus had to be given up because of the severe uncontrollable hemorrhage. The uterus was tightly packed, and the patient was given alpha-hypophamine (pitocin®) intramuscularly. The abdomen was prepared for surgical intervention. A low midline incision was made, and a supracervical hysterectomy was performed rapidly. At the close of the operation the uterine area was carefully examined for bleeding. The area of surgery was dry at this time, although the blood pressure had dropped alarmingly. The vessels in both broad ligaments and on the uterus were tortuous and large. The abdomen was closed in layers. The patient had been given a blood transfusion at the beginning of, and during, the operation. Her blood pressure dropped postoperatively to 44 systolic and 30 diastolic and remained at this level despite the infusion of 1,000 cc. of whole blood and 1,500 cc. of dextrose and isotonic sodium chloride solution. At 2 p. m. her red blood cell count was 2,150,000 with 39 per cent hemoglobin. At 5 p. m. her condition was poor. Dulness was noted in the flanks. The pulse was rapid and weak. She was taken back to the operating

From Grace Hospital.

1. Dubreuil, G., and Loubat, E.: Ann. d' anat. path. 3: 697-718, 1926.
2. Graves, W. P., and Smith, G. Van S.: Cirsoid Aneurysm of the Uterus, Am. J. Obst. & Gynec. 14: 30-34, 1927.

room, and a transfusion of 3,000 cc. of whole blood was given. The abdominal incision was reopened and the peritoneal cavity was entered. When the abdomen was opened a large amount of blood was found, which was coming from a vessel in the left broad ligament. This was clamped and tied, and the abdomen was closed. The condition of the patient improved immediately after ligation of the bleeding vessel. The blood pressure was 90 systolic and 40 diastolic at the end of the operation, and the pulse was of good quality. The patient, who was almost moribund at the start of the operation, was now able to talk and seemed to be in fairly good condition.

After the second operation her convalescence was uneventful, and she was discharged March 6, 1949, her twelfth postoperative day.

*Pathologic Report.*—Gross: The total specimen was widely opened. The body of the uterus measured 6 by 6 by 5 cm. The serosal surface was smooth. The myometrium did not contain any tumor. Located in the myometrium were several cystic spaces which measured up to 4 by 4 by 5 mm. A portion of blood clot remained in a few of the cystic spaces. The endometrium was 2 mm. thick and it was smooth. The attached uppermost portion of cervix measured 3 by 2.5 by 2.5 cm.

Microscopic: The myometrium exhibited a considerable amount of fibrosis, which was present throughout all the sections made. There were also a number of large, heavy-walled blood vessels and many blood spaces. In addition, there was an area in which there were a large number of blood spaces of various sizes and contours, most of which had thick, hypertrophied, muscular walls. This observation is characteristic of an arteriovenous aneurysm, although it is impossible to demonstrate the connection between artery and vein. Some of the spaces in this area approximated the endometrium. The latter was thin and greatly exfoliated, exhibiting much hemorrhage. The cervical portion displayed extensive fibrosis, numerous large, heavy-walled blood vessels and numerous cystic glands. There was no malignancy.

Diagnosis: The diagnosis was cirsoid aneurysm of the myometrium, fibrosis of the myometrium, and fibrosis and cystic glands of the cervix.

*Follow-Up.*—The patient has remained in good health and no longer complains of pain in the head. The blood cell count at the time of her discharge from the hospital was 4,000,000 red blood cells, with 81 per cent hemoglobin.

### COMMENT

The importance of this vascular pathologic development depends less on its rarity, when the vessels involved are uterine, than on the extreme seriousness to the patient. Of the 2 cases previously reported, death occurred postoperatively in 1 and hemiplegia developed on the seventh postoperative day in the other. Only the prompt intervention of the operating surgeon (R. P. R.) saved the life of the patient here reported on two occasions: first, when she began to hemorrhage as a result of instrumentation of the cervix and second, when one of the large, thick-walled vessels in the left broad ligament opened postoperatively. Reoperation five hours after hysterectomy definitely prevented a fatality.

In a comparison of the 3 cases, several features appear to be common to all. In every instance the uterus was soft and the vessels in the broad ligaments were decidedly dilated and tortuous. A soft uterus of this type could easily be diagnosed as indicative of an early stage of pregnancy. In the case of Graves and Smith, as in our case, dilatation of the cervix resulted in profuse hemorrhage. Enormously dilated vessels are the most prominent features in all 3 cases. The difficulty of controlling bleeding at the stump was also noted by Dubreuil and Loubat. Fibrosis of the uterus was a prominent feature in all the cases.

Graves and Smith's patient and Dubreuil and Loubat's patient were both 62 years of age. For this reason it was thought that the condition was acquired after menopause and was probably the result of arteriosclerosis. Our patient was only 42 years of age and had not passed through the menopause, but her uterus displayed a pronounced degree of fibrosis and the uterine vessels presented a decided thickening of the tunica media, as is seen in arteriosclerosis.

### SUMMARY AND CONCLUSION

1. Cirsoid aneurysm of the myometrium is an extremely rare condition.

2. The uterus is usually soft, so that a diagnosis of pregnancy with retained secundines is not uncommon.

3. Dilatation of the cervix usually results in a profuse uncontrollable hemorrhage requiring hysterectomy.

4. Because of the extreme degree of tortuosity of vessels in the broad ligaments and uterus, and the decided thickening of their walls, the control of bleeding is difficult and secondary hemorrhage is apt to occur.

5. All cases of cirsoid aneurysm of the myometrium require hysterectomy if the diagnosis is suspected. Dilatation and curettage is definitely contraindicated.

6. Fibrosis of the uterus and pronounced sclerosis of the uterine vessels appears to be the most prominent microscopical feature of this condition.

856 Fisher Building.

## Committee on Cosmetics

### REPORT TO THE COMMITTEE

*The Committee on Cosmetics has authorized publication of the following report.* AUSTIN SMITH, M.D., *Secretary.*

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## HEALTH ASPECTS OF COMMON CHEMICALS USED IN HAIR-WAVING PREPARATIONS

A. J. LEHMAN, M.D.
Washington, D. C.

The use of chemicals for the production of curl in hair is of relatively recent origin. The first so-called permanent waves obtained by means of chemicals were produced with borax, water and heat. This process was developed shortly after the turn of the century. A significant advance in chemical processes for waving of hair was the discovery, shortly after World War I, that the use of ammonia with the borax could produce a more satisfactory curl and simultaneously reduce the "curling time."[1] Various chemicals have been explored for their adaptability to the production of curl in hair, with or without the application of heat. Heat may be applied in two ways, by some mechanical device, in the machine type of wave, or by the release of heat resulting from a chemical reaction, the machineless type. Solutions of ammonia or ammonium carbonate are the chemicals employed in this process, and injuries which may result are simple heat burns and will not be discussed here.

This paper is limited to the discussion of local and systemic effects which may result following exposure to chemicals used in the "cold" permanent waving of hair. Among these are the alkaline sulfites, alkaline solutions of ammonium hydrogen sulfide and, currently popular, the various salts of thioglycolic acid. Thioglycerol is also an efficient agent, but because of manufacturing difficulties its use has been limited. Large volume production is now possible, and thioglycerol may assume greater commercial importance.

Chief, Division of Pharmacology, Food and Drug Administration, Federal Security Agency.

1. Suter, M. J.: J. Soc. Cos. Chem. 1:103 (March) 1948.

### REGULATION OF COSMETICS

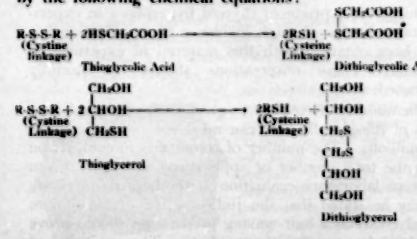
Undoubtedly the ingredients of cosmetics a few decades ago were largely of simple animal, vegetable and mineral origin, and injuries resulting from the use of such products were less serious than may be obtained with newer synthetic bases or solvents. Cosmetic preparations were not mentioned for regulation in the Food and Drugs Act of 1906. During the last few decades cosmetics have acquired general popularity. At the same time the advent of synthetic chemistry has introduced many new chemicals into the field, with the result that complaints of injury have increased to the point where regulations for the use of these newer materials are necessary. Regulatory measures to minimize the possibility of introducing harmful ingredients were legalized by Congress in the Federal Food, Drug and Cosmetic Act of 1938. The section of the Act which applies to the hair-waving preparations forbids the use of poisonous or deleterious substances which may be injurious when such preparations are used in the customary manner. A variety of pharmacologic data should be obtained by the manufacturer or producer before the product is marketed to permit an adequate appraisal of any possible hazard.

### CHEMICAL ASPECTS OF COLD PERMANENT WAVING

The waving procedure involves chemical, physical and morphologic changes in the hair. The stratum corneum of the epidermis and the hair and nails are composed chiefly of fibrous proteins. Although these possess considerable refractoriness to chemical action, they are susceptible to the action of alkalies and to keratolytic activity. For this reason, the majority of the cold waving solutions are composed of a keratolytic agent with sufficient alkali, commonly ammonia, to adjust the waving solution to a $p_H$ of 9.0–9.5.

During the waving procedure the hair is rendered plastic as the result of the alkaline reduction of the cystine and other linkages in the hair. The extent of the change produced is determined by the concentration of the active ingredients in the solution, total time of exposure, temperature and $p_H$.

The alkaline salts of thioglycolic acid dissolve hair or wool actively at $p_H$ 11.0. At $p_H$ 9.0–9.5, the range employed in the waving procedure, keratolysis still occurs but at a much slower rate. The reducing action of the thioglycolic acid or thioglycerol on the cystine linkage is not clearly understood but may be illustrated by the following chemical equations:




### EFFECTS OF OTHER COMPONENTS OF WAVING SOLUTIONS

It is a common procedure to include a surface active agent in waving solutions. The addition of such agents produces a rapid and even distribution of the waving solution through the hair. Whereas these properties are desirable, such wetting agents also account for an undesirable tendency for a greater seepage of the solution through the hair and for an increased amount of the lotion to reach the scalp.

Gums and resins or so-called clouding agents are added to waving lotions for a number of purposes: (*a*) to increase the viscosity of the solutions, (*b*) to obtain better physical application to the hair and (*c*) to minimize the amount of solution reaching the scalp. Any procedure which decreases the amount of lotion reaching the scalp minimizes the likelihood of toxic reactions. However, certain synthetic gums or resins can be, and have been, responsible for the production of sensitizations in both patrons and operators. In the case of some waving lotions the incidence of sensitizations has been sufficiently common to preclude their use.

Perfumes and coloring agents are added to hair-waving solutions for esthetic effect. Since most cold hair-waving lotions contain a sulfur compound, they possess an offensive odor which requires a perfuming agent to mask it. Danger from the use of perfuming agents is slight, although these have occasionally produced sensitization.

The chemical reaction accounting for the "waving procedure" is arrested by the use of so-called neutralizers. These are weak oxidizing agents employed in a weakly acidic medium. Such agents as peroxides, perborates and bromates, and in some cases in a solution containing citric acid, are usually employed for this purpose. These weakly oxidizing, or mildly acidic, solutions have not caused adverse local or systemic effects.

### PHARMACOLOGY

Alkaline ammonium hydrogen sulfide,[2] formerly used, and the alkaline solutions of mercaptans,[3] currently used in cold hair-waving solutions, are not inert physiologically. In experiments both classes of compounds produced local and systemic toxic effects when administered percutaneously by various technics.[4] Some of these experimental technics may seem rigorous, especially since it is often stated that a consumer may be exposed to the waving procedure only once every second or third month. The toxicity experiments[4] were purposely designed to be rigorous because the operator in the beauty shop is exposed daily to varying quantities of the solution. It thus becomes pertinent to observe the effect of daily exposures of laboratory animals to varying quantities of the waving lotion.

These experiments furnish data on the extent of cutaneous absorption of the waving ingredient, tissue storage (if any), excretion, organ function (liver and kidney) and blood and also furnish material for histologic studies of the tissues of treated animals. These studies, therefore, should establish the levels of administration at which damage will be first observed and supply the data necessary to establish a margin of safety in the use of a given waving preparation.

The waving lotion in the aforementioned tests was applied to the clipped intact skin of the experimental

2. Laug, E. P., and Draize, J. H.: J. Pharmacol. & Exper. Therap. **76**:179 (Oct.) 1942. Bunce, A. H.; Parker, F. P., and Lewis, G. T.: Accidental Death from Absorption of Heatless Permanent Wave Solution, J. A. M. A. **116**:1515 (April 5) 1941.

3. Draize, J. H.; Alvarez, E., and Whitesell, M.: Proc. Scient. Sec. Toilet Goods A., no. 7, p. 29, May 16, 1947. Draize, J. H.; Alvarez, E., and Woodard, M.: Federation Proc. Soc., Pharm. & Exper. Therap. **8**:287 (March) 1949.

4. Draize, J. H.; Woodard, G., and Calvery, H. O.: J. Pharmacol. & Exper. Therap. **82**:377 (Dec.) 1944.

subject rather than to the hair as occurs in practice. However, the amount of solution which ultimately reaches the scalp during any waving procedure depends largely on the skill of the operator. From current injury reports, it is evident that in some cases waving lotion remained in contact with the scalp for a considerable period.

The chemical nature of waving lotions, that is, their ability to alter hair and, consequently, the epidermis, accounts for their ability to produce primary irritations of the skin. A review of complaints of injury following the use of waving lotions reveals that approximately 80 per cent refer to a dermatitis not unlike that which may result from a simple chemical burn.

These injuries consist of erythema and edema of the skin of the scalp or face when the waving solution has been allowed to remain in contact through negligence of the operator or through a misunderstanding of the directions for use. Experimentally, injuries referable to the use of ammonia-borax or alkaline sulfite hair-waving preparations were predominantly a maceration or a keratolytic effect on the stratum corneum of the epidermis. Experimental evidence [2] on alkaline solutions of ammonium hydrogen sulfide indicates that such preparations are so extremely hazardous as to preclude their use in hair-waving agents. This has stimulated the search for less toxic substances, and as a result thioglycolic acid and thioglycerol have been introduced into the cosmetic field.

These mercaptans, now in current use in waving solutions, are readily absorbed by the skin of experimental animals. In the rigorous animal testing of the thioglycolate employing multiple dose applications (daily injunctions for a ninety day period), the adverse effects were acute and almost entirely limited to severe cutaneous reaction. The manner in which these tests were conducted represented quantities and number of applications greatly in excess of those which would obtain for the patron who is given a permanent wave three or four times yearly. Thioglycerol under similar conditions of testing produced an acute local cutaneous reaction, but this was less severe than that observed with the thioglycolate. Thioglycerol, however, caused a rather high incidence of sensitization and thyroid epithelial hyperplasia.

Recovery from acute poisoning in animals is rapid and is reflected in rapid improvement of the general appearance of the experimental animals on discontinuance of the treatment. The rapid decrease in total sulfur excretion, after treatment is interrupted, further reflects the observation that poisoning is an acute phenomenon.

### CONTAMINANT AND OXIDATION PRODUCTS OF THIOGLYCOLIC WAVE LOTIONS

Since thioglycolic acid in the form of various salts is the active ingredient of 75 per cent or more of the cold waving lotions in current use, investigations following the usual technics have been made of the percutaneous toxicity of the common contaminants usually present in such waving lotions, namely, thiodiglycolic acid ($S[CH_2COOH]_2$) and the oxidation product of thioglycolic acid–dithioglycolic acid ($SCH_2COOH)_2$. Both of these products tested under conditions and concentrations comparable to those in which the waving lotion used were found less toxic to the laboratory animal than was the thioglycolate.

### HISTOLOGIC OBSERVATIONS

Histologic examination of tissues of animals poisoned with topically applied ammonium hydrogen sulfide revealed an acute necrotizing dermatitis. In cases of severe dermatitis there was sometimes complete necrosis of the epidermis, hair follicles and corium. The corium generally showed less damage than the epidermis. Animals dying two to four days after exposure showed numerous foci of recent coagulative necrosis of the liver and renal damage consisting of slight necrosis of the tubules and the presence of moderate amounts of protein material in the tubular lumens. The animals on which thioglycolate was used that did not exhibit the severe acute poisoning had mild dermatitis and minor visceral changes. In acute fatal thioglycolate poisoning, the animals exhibited severe dermatitis, subcutaneous hemorrhages and visceral changes in parenchymatous organs not unlike those observed in conditions of severe inanition.

The animals on which thioglycerol was used exhibited no severe cutaneous lesions or significant visceral organ changes. There was, however, hyperplasia of the thyroid gland. The significance of this hyperplasia has not as yet been adequately explored.

### HEMATOLOGIC OBSERVATIONS

Repeated examinations of the blood of the animals in the subacute toxicity experiments failed to reveal any abnormalities in the subjects treated with thioglycerol. Animals treated with the thioglycolate solutions exhibited some fluctuation in hemoglobin levels and in volume of packed red cells. These fluctuations were within normal limits.

### SUMMARY AND CONCLUSIONS

The mercaptans in current use as hair-waving preparations are capable of producing local and systemic toxic effects. It has been demonstrated experimentally that in thioglycolate-treated animals the adverse effects are due primarily to the thioglycolate ion and not to the contaminant (thio-ether) or its oxidation product (thiodiglycolate ion).

The poisoning is an acute phenomenon and recovery is rapid.

Thioglycerol produces thyroid hyperplasia in experimental animals. A high incidence of sensitization has also been obtained with this material in experimental animals. These observations should be carefully appraised.

The number of cold waves given each year employing salts of thioglycolic acid can no doubt be estimated in the millions. The number of complaints in comparison with the total number of applications is small. From rigorous laboratory evaluation of the hazards involved, it may be stated that the judicious use of ammonium thioglycolate as a hair-waving preparation should prove a relatively innocuous procedure. The majority of complaints from patrons and operators are probably due to the misuse of the product because of failure to heed directions or precautions. Allergic responses to the thioglycolates appear to have occurred only rarely.

Allowance must also be made for allergic responses to the other ingredients, such as wetting agents and perfumes.

It is believed that protection for the hands is essential in the case of operators or persons who have occasion to be exposed daily to varying amounts of the waving solution.

## Council on Physical Medicine and Rehabilitation

### REPORTS OF THE COUNCIL

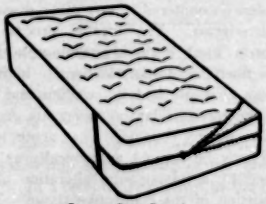
*The Council on Physical Medicine and Rehabilitation has authorized publication of the following report.*

HOWARD A. CARTER, *Secretary.*

### PROTECTO-DUST ENCASINGS ACCEPTABLE

Manufacturer: Allergy Free Products, 224 Livingston Street, Brooklyn 2.

The Protecto-Dust Encasings are coverings for mattresses, box springs and pillows designed to protect users who are allergic to dusts associated with these articles. The essential material is a fabric called fairprene.® The Protecto-Dust Encasings are made to fit the individual order; the patient merely sends the exact measurements.



Protecto-Dust Encasing

The manufacturer claims that this material is odorless and washable, withstands sterilization by boiling and with ordinary care gives years of service. These claims were verified by evidence obtained by the Council from acceptable sources.

The Council on Physical Medicine and Rehabilitation voted to include the Protecto-Dust Encasings in its list of accepted devices.

### NATIONAL LIGHT DUTY CAUTERY SET ACCEPTABLE

Manufacturer: National Electric Instrument Co., Inc., 92-21 Corona Avenue, Elmhurst, Long Island, N. Y.

The National Light Duty Cautery Set is designed for eye, nose, throat and dental use. It includes one cautery transformer, one pencil type cautery tip (electrode) holder and three sets of cautery tips. The cautery transformer operates on 110 volts of 50 to 60 cycle alternating current. It controls the heat of the pencil cautery electrodes and is stated to be capable of operating National cautery tips up to 20 amperes; the tips furnished with the set were stated to draw less than 20 amperes.

National Light Duty Cautery Set

The cautery pencil furnished with each set has a nonconductive insulating casing machined from a cast resin. Two platinum wire tips are components of the eye cautery set; two similar platinum tips are components of the nose and throat set, and a third pair are components of the dental set. The over-all dimensions of the apparatus are 8 by 9 by 14 cm. (3¼ by 3½ by 5½ inches). It weighs 1.5 Kg. (3 pounds, 6 ounces). The weight for domestic shipment is 1.7 Kg. (3 pounds, 14 ounces) and for foreign shipment 2 Kg. (4 pounds, 6 ounces).

The apparatus was given a thorough trial under conditions acceptable to the Council and was found to be satisfactory in construction and performance. The Council on Physical Medicine and Rehabilitation voted to include the National Light Duty Cautery Set in its list of accepted devices.

### BOVIE ELECTROSURGICAL UNIT, MODEL O-3, ACCEPTABLE

Manufacturer: The Liebel-Flarsheim Company, 303 West Third Street, Cincinnati 2.

The Bovie Electrosurgical Unit, Model O-3 (Office Bovie), is a new design based on a previously accepted 3-Gap Model Portable Bovie Electrosurgical Unit. The new feature is a special circuit for high frequency epilation in addition to the original arrangements for cutting, coagulation, desiccation and fulguration.

Bovie Electrosurgical Unit, Model O-3

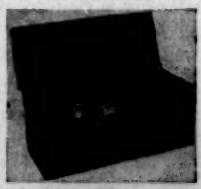
For operation, the apparatus requires 115 volts of alternating current and draws 11 amperes. Accessories include a foot switch, a stainless steel indifferent plate, two chuck handles and a standard set of electrodes. The dimensions are 67 by 48 by 33 cm. (26½ by 19 by 13 inches) and the weight is 45 Kg. (100 pounds). The weights for domestic and foreign shipment are 60 Kg. (130 pounds) and 91 Kg. (200 pounds), respectively.

The apparatus was given a thorough clinical trial under conditions acceptable to the Council. On the basis of this and other evidence of satisfactory construction and performance, the Council on Physical Medicine and Rehabilitation voted to include the Bovie Electrosurgical Unit, Model O-3, in its list of accepted devices.

### CAMBRIDGE SIMPLI-TROL MODEL PORTABLE ELECTROCARDIOGRAPH ACCEPTABLE

Manufacturer: Cambridge Instrument Co., Inc., Grand Central Terminal, New York 17.

The Cambridge Simpli-Trol Model Portable Electrocardiograph is a portable string-galvanometer type of instrument equipped for photographic recording. It is housed in a mahogany case measuring 25 by 20 by 48 cm. (10 by 8 by 19 inches) and weighs 14 Kg. (30 pounds). The weight for domestic shipment is 18 Kg. (40 pounds) and for foreign, 43 Kg. (94 pounds). Accessories include 4 direct-contact electrodes, 1 exploring chest electrode, 1 roll Camco no. 30 photographic paper and 1 tube of Cambridge electrode jelly. It operates on 110 volt alternating current and draws 60 watts.



Cambridge Simpli-Trol Model Portable Electrocardiograph

The instrument was tested in a physical and a clinical laboratory acceptable to the Council, and convincing evidence was obtained that the published requirements of the Council for acceptance of electrocardiographs were satisfied. The Council on Physical Medicine and Rehabilitation voted to include the Cambridge Simpli-Trol Model Portable Electrocardiograph in its list of accepted devices.

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MORRIS FISHBEIN, M.D.
Assistant Editor, AUSTIN SMITH, M.D.

Associate Editors
JOHNSON P. HAMMOND, M.D. RICHARD J. PLUNKETT, M.D.

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SATURDAY, NOVEMBER 19, 1949

## DISSEMINATED LUPUS ERYTHEMATOSUS

Disseminated lupus erythematosus is a prolonged febrile disease of the body which, in the absence of cutaneous manifestations, may superficially resemble rheumatic fever and rheumatoid arthritis. In the absence of cutaneous manifestations diagnosis may be extremely difficult. Features such as lymphadenopathy, retinal alterations in the form of rather typical perivascular hemorrhages or fluffy exudates, leukopenia and a false positive Wassermann serum reaction may be present during an exacerbation of disseminated lupus erythematosus and may aid in differentation from rheumatic fever.

The erythema on the bridge of the nose and cheeks and other areas of the skin exposed to sunlight and wind is not the primary manifestation of lupus erythematosus, and these lesions are not responsible for the alterations in the viscera. Osler, among others, emphasized that the alterations occurring in the skin of patients with disseminated lupus erythematosus had their counterparts in the internal organs. The cutaneous lesions may be absent throughout the entire course of the disease or may appear only during acute exacerbations or in the terminal stage.

The clinical picture is indeed complex. In the active stage there is constant fever and there may be arthralgias, weakness, weight loss, fatigue, characteristic erythematous eruptions, ulcerative lesions of the mucous membrane of the mouth and local or generalized lymphadenopathy. There may be clinical evidence of pneumonia, and albumin and red cells may appear in the urine. Pericarditis and verrucous endocarditis are frequent. Libman-Sacks' cases of atypical verrucous nonbacterial endocarditis are essentially cases of lupus erythematosus. The liver may be enlarged and the spleen palpable. Tumulty and Harvey [1] emphasize the importance of nervous system manifestations. In their series of 32 patients, 4 had convulsive episodes, 4 presented a toxic psychosis, 3 patients had transient periods of coma, 3 had hemiplegia, 2 patients had transient episodes of bilateral ptosis and 1 had attacks of jacksonian epilepsy. Baehr and Pollack [2] stress the predominant occurrence of lupus erythematosus in young women, which in their studies amounted to 95 per cent. The disease runs its course even to death after a variable period, which may be weeks, months or years. Complete or partial remissions may last months to years.

Klemperer, Pollack and Baehr [3] noted in their histologic studies of 12 patients with disseminated lupus erythematosus a widespread alteration in the connective tissue affecting the heart, serous membranes, blood vessels, lymph nodes, skin and mediastinal and retroperitoneal areas. The most impressive change observed in the kidneys was a peculiar alteration of the glomerular loops characterized as "wireloop" because of resemblance to loops of bent wire. The widespread, frequent and characteristic alterations of collagen, together with specific predilection of the injury for the collagen in certain sites, such as the heart, glomeruli, blood vessels, skin, spleen and retroperitoneal tissues, have not been encountered in any other disease except diffuse scleroderma. The morbid process becomes manifest in a focal fibrinoid metamorphosis of the collagenous fibers, resulting occasionally in fragmentation of these elements and in swelling and increased density of the interfibrillar homogeneous ground substance. Klemperer [4] concluded that acute lupus erythematosus may be defined anatomically as a disease characterized by a fundamental alteration of the collagenous portion of the connective tissue. The exact nature of the alteration, he feels, must be determined by methods of histology, biochemistry and biophysics.

Montgomery and McCreight [5] question the collagenous theory advanced by the Mount Sinai group (Klemperer, Pollack and Baehr). They found in the biopsies of 96 cutaneous lesions of disseminated lupus erythematosus, using various connective tissue strains, alterations of collagen, including fibrinoid change in the walls of the vessels in the skin and the connective tissue of the skin, in less than one fourth of their cases of chronic, subacute and acute disseminated lupus erythematosus. In most instances in which fibrinoid degeneration could be demonstrated, it was minimal and no greater than that seen in many other chronic inflammatory infectious diseases of the skin.

The course of the disease is not known. Recent investigators reject the concept of tuberculous origin of the disease. Montgomery and McCreight were able to demonstrate the lupus erythematosus cells described by Hargraves in sternal aspirations in 5 of 7 cases

1. Tumulty, P. A., and Harvey, A. M.: The Clinical Course of Disseminated Lupus Erythematosus: An Evaluation of Osler's Contributions, Bull. Johns Hopkins Hosp. 85:47 (July) 1949.

2. Baehr, G., and Pollack, A. D.: Disseminated Lupus Erythematosus and Diffuse Scleroderma, J. A. M. A. 134:1149 (Aug. 2) 1947.

3. Klemperer, P.; Pollack, A. D., and Baehr, G.: Pathology of Disseminated Lupus Erythematosus, Arch. Path. 32:569 (Oct.) 1941.

4. Klemperer, P.: The Pathogenesis of Lupus Erythematosus and Allied Conditions, Ann. Int. Med. 29:1 (Jan.) 1948.

5. Montgomery, H., and McCreight, W. G.: Disseminated Lupus Erythematosus, Arch. Dermat. & Syph. 60:356 (Sept.) 1949.

of acute disseminated lupus erythematosus and 3 of 18 cases of subacute disseminated lupus erythematosus. These cells have not thus far been observed in any other condition, except in 1 case of myeloma. They may provide an important diagnostic feature of the disease.

The collagenous theory of Klemperer does not explain the pathogenesis of the disease but it does offer an anatomic substratum for the concept. To gain further information concerning the disease, Klemperer suggests that the structural alteration of the connective tissue, described by him, should be studied in terms of reactions to well defined chemical and physical influences. A study of this type has recently been reported by Altshuler and Angevine.[6] These authors studied pathologic tissue from patients with lupus erythematosus and rheumatic fever by various stains and were able to show that the common feature of fibrinoid formation of the connective tissue is the precipitation of the acid mucopolysaccharides of the ground substance. Such studies provide the information that is necessary to lead to complete understanding of the course of this disease. Perhaps it is not too much to hope that even a curative treatment may be developed soon.

## FEE SCHEDULES AND THE SHERMAN ANTITRUST ACT

Price fixing, as it relates to commodities and articles of trade, has been declared by the United States Supreme Court to be an unreasonable restraint of trade and illegal within the meaning of the Sherman Antitrust Act. In a recent case decided by the district court for the District of Columbia the government contended for the first time that the adoption of fee schedules applicable to the delivery of personal services is likewise proscribed by the federal law. The Washington Real Estate Board had for many years, as had other associations of brokers, prescribed rates of commissions for brokers' services, and prior to this case the government had never contended that such activity violated the Sherman Antitrust Act. The Washington Board and its individual members, however, were alleged to have "combined to fix real estate brokerage commissions" in an unlawful manner. The National Association of Real Estate Boards was also named a defendant in the case for having allegedly "encouraged" and "incited" the local organization to act as it did. This was not a clandestine or surreptitious activity of the Washington Board, and the rates were generally adhered to by members and nonmembers in the Washington area. In denying the government's request for an injunction, the trial judge said:

> A real estate board may in a sense be likened to a labor union of real estate brokers. Admittedly there is no case in the Federal courts that has applied to personal services the rule that the fixing of prices of commodities or articles is *per se* an unreasonable restraint of trade. To contract for one's personal services is a fundamental right of every man. For men to combine to regulate the compensation to be charged by them for their own services is also entirely legal. While this right has been generally recognized in respect to persons who toil for wages or salaries, no reason appears discernible why it is not equally applicable in principle to those persons who work for commissions. The instant case appears to be the first occasion in the history of the enforcement of the Sherman Act that the Government has challenged this right.

As a matter of fact, the result of the stabilization of charges and the consequent uniformity has generally been considered as being in the public interest, although the court conceded that a different problem might be presented if the rates fixed were shown to be unreasonable.

The similarity between the fixing of brokers' commissions by brokers' organizations and acceptance of fee schedules by medical societies and bar associations is, of course, readily apparent. Government itself has encouraged, and even required, the adoption of physicians' fee schedules. Examples of this activity at the federal level are the Veterans Administration medical care program and some of the activities of the Children's Bureau. At the state level workmen's compensation laws have necessitated the fixing of fees for medical services. At the local level fee schedules applicable to welfare patients are not uncommon.

If the court had upheld the government's contention that the adoption of fee schedules is contrary to the Sherman Antitrust Act, the government itself could be shown to be one of the worst offenders. Fortunately, the decision of the court has thwarted another unreasonable attempt by government to extend its control over private enterprise.

## ALLERGY TO REFINED FOOD PRODUCTS

Food allergy recently has received considerable attention in the medical and lay press. There are clearly defined instances where ingestion of a particular food provokes an unmistakable allergic response in certain persons; such reactions usually are recognized without difficulty. On the other hand, atypical signs, such as unexplained headache, fatigue, muscle pains, depressed spirits and slight changes in the leukopenic index, sometimes have been regarded as allergic responses to some constituent of the diet. While such symptoms are not generally considered to constitute a reliable basis for a diagnosis of allergy, nevertheless some have been interpreted as such and, as a result, the idea has been advanced that cereals, notably wheat and corn, are major causes of food allergy. In fact, not only has the crude, protein-containing flour been implicated but its refined products as well.

Corn starch and corn sugar have been pointed out as particularly menacing because of their inclusion in a wide variety of unsuspected articles, such as milk cartons, frozen food containers and excipients. It has been stated that corn syrups and dextrose may sensitize the bottle-fed infant. As a result of such suspicions, the avoidance of oils, sugars and starches by

6. Altshuler, C. H., and Angevine, D. M.: Histochemical Studies on the Pathogenesis of Fibrinoid, Am. J. Path. 25:1061 (Sept.) 1949.

those occasional patients who are allergic to the unrefined sources of these foods has been advocated. However, the criteria on which the warnings are based have not been generally accepted. The customary cutaneous tests are not entirely reliable for the diagnosis of food allergy. Development of such subjective symptoms as headache, chilliness and fatigue after the feeding of a frankly suspected test meal are not sufficient to convince the average physician that a state of allergy exists. Any new regimen, including the elimination of suspected foods from the diet, may bring temporary relief, and a minimal diagnostic requirement should be reproduction in the patient of his symptoms on more than one occasion when the suspected food is included in a test meal unknown to the patient. He also should be given control meals lacking the food under suspicion.

The antigenicity of sugars, starches and oils has not been established in the laboratory animal; anaphylactic antibodies have not been provoked by their deliberate administration. Dextrose has been given to man, even by the intravenous route, without any known incidence of anaphylaxis. It would seem advisable, then, for physicians to wait for an incontrovertible scientific evaluation before they regard refined food products as a dangerous threat to the patient with allergy.

## Current Comment

### A HYPOTHESIS OF THE PRODUCTION OF DENTAL CARIES

It is assumed that lactic acid results from reaction between lactobacilli in the mouth and carbohydrate material packed in the grooves in the biting surfaces of the teeth. The acid thus produced attacks the enamel and causes caries. Pincus [1] points out that the grooves of molar teeth are shallow cusps on the biting surface with extension far into the tooth. Such extensions are narrow and deep. The protein filling the groove may remain undisturbed, but the groove protein, the enamel protein and the dentine protein all contain combined sulfuric acid. Many bacteria, including strains of gram-negative bacilli in the carious material, can form from sulfatase, an enzyme which acts on a polysaccharide in these proteins releasing sulfuric acid. As yet the enzyme has not been shown to attack the dentine or enamel proteins but has been shown to attack a polysaccharide from these substances. When this acid is freed, equilibrium is maintained by the release of calcium salts (particularly calcium phosphate) in sound tooth structure, resulting in calcium sulfate. This might be expected to leave a friable enamel and soft dentine, the enamel being the more seriously affected because of its higher inorganic content. Although the production of lactic acid is not denied, there is insufficient proof that a degree of acidity sufficient to produce caries is ever maintained in the mouth cavity. In fact, caries does not develop in the superficial part of the groove as would be necessary in the carbohydrate plaque but rather makes its first appearance at the bottom. Calcium sulfate has been identified in carious material. The conditions at the bottom of the groove would be favorable for the multiplication of bacilli and the action of the sulfatase and other necessary enzymes.

1. Pincus, P.: The Production of Dental Caries, Brit. M. J. 2:358 (Aug. 13) 1949

### CATALOG OF CULTURES

The fifth edition of the "Catalogue of Cultures" has just been released by the American Type Culture Collection; the previous edition was published in 1938. The list of micro-organisms has changed appreciably in the eleven year interval through the addition of new species and strains and the loss or discard of others. Of the 2,975 strains designated in the current edition 49 per cent are bacteria, 28 per cent are fungi, 16 per cent are yeasts and the remainder are intermediate forms, algae, protozoa and bacteriophages. Viral and rickettsial agents will be available for distribution in the near future. Strains included in the catalog are available in the lyophilized state or as test tube cultures. Distribution is limited to recognized laboratories staffed by trained microbiologists. The American Type Culture Collection was founded to perform an essential service to microbiology. It has been supported since its beginning by sale of cultures and by gifts. The collection was formerly maintained at Georgetown University School of Medicine but was established in 1947 at 2029 M Street, N.W., Washington, D. C. To make the collection self supporting, the price of cultures, beginning Jan. 1, 1950, will be $10 each with a discount of 70 per cent to educational and charitable institutions and to organizations and individuals whose activities primarily concern the public welfare.

### POSTPARTUM HEMOSTASIS

In studies of coagulation mechanisms in pregnancy, Weiner [1] and his associates of Harvard University aspirated amniotic fluid from intact membranes of women in labor. They found that 0.1 cc. of amniotic fluid would shorten, by at least half, the normal coagulation time of 2 cc. of freshly drawn venous blood. Blood samples, the normal coagulation time of which was 8 minutes, would form firm clots in 2.6 to 3.6 minutes. When blood from patients with hemophilia was used, the prolonged clotting time of 54 minutes was shortened to 3.8 minutes by the addition of one-twentieth volume of amniotic fluid. The activity of amniotic fluid is preserved for several days by storage at —10 C. The fluid is not inactivated by heating to 60 C. for 30 minutes, but is inactivated by boiling for 5 minutes. It is also inactivated by the addition of a small amount of heparin. The active principle is non-dialyzable and has properties similar to those of thromboplastin. Weiner suggests the initiation of clotting of shed intrauterine blood as one of the probable functions of amniotic fluid. It would thus play an important role in postpartum hemostasis.

1. Weiner, A. E.; Reid, D. E., and Roby, C. C.: Science 110:190 (Aug. 19) 1949.

# ORGANIZATION SECTION

## Official Notes

### APPOINT DIRECTOR OF COMMISSION ON CHRONIC ILLNESS

Dr. Morton L. Levin, Albany, N. Y., assistant commissioner for medical services of the New York State Department of Health, has been appointed director of the Commission on Chronic Illness. Dr. Levin has been granted leave of absence from his present post. Announcement of the appointment, effective Jan. 1, 1950, was made by Leonard W. Mayo of New York, chairman of the commission, the office of which will be located at the headquarters of the American Medical Association in Chicago. The commission originated under the sponsorship of the American Medical Association, the American Hospital Association, the American Public Health Association and the American Public Welfare Association. Its members include representatives of industry, labor, agriculture, education and other public interest groups, as well as those of the four sponsoring organizations.

In announcing the appointment, Mr. Mayo pointed out that Dr. Levin's training and experience in public health research and administration and in the special field of chronic illness particularly qualify him for directing the commission's work. He is a graduate of the University of Maryland School of Medicine and Johns Hopkins University and was instructor in epidemiology at the latter institution in 1934-1935. He also has served as medical director of the New York State Health Preparedness Commission and is associate research director of the New York State Cancer Commission.

The Commission on Chronic Illness was created in May 1949, to stimulate the formation of a well rounded program for the prevention and control of chronic disease and for the care and rehabilitation of the chronically ill.

The commission is engaged in assembling existing data in order to evaluate information now available and determine areas requiring further study. Its program also includes:

1. Encouraging universities and all other institutions responsible for research and for professional and technical training for the health services to emphasize the preventive aspects and the broad socioeconomic responsibilities medical science must assume in preventing chronic and disabling illnesses to the greatest extent possible and in rehabilitating its victims through humane and continuing treatment.

2. Promoting educational programs for the general public to increase understanding of chronic illness so that people may avoid predisposing conditions, recognize symptoms in early and curable stages and participate more hopefully, intelligently and effectively in the management of their own illness and in the care of chronically ill persons in their own families.

3. Stimulating development of new methods in organization and administration of services to the chronically ill.

4. Developing suggested patterns for integrated community programs.

5. Establishing criteria for appraisal of state and local chronic disease programs and facilities.

6. Suggesting priorities for determination of immediate as against long range needs as guides to state and local communities.

7. Exploring methods of giving effect to recommendations to be made by the commission.

8. Preparing a report to the American people outlining a comprehensive plan for prevention and control of chronic disease and for care and rehabilitation of the chronically ill.

## Washington Letter

*(From a Special Correspondent)*

Nov. 14, 1949.

### New Child Health Study Launched

A technical committee on fact finding, whose membership includes several physicians, met in Washington November 7 to complete plans for a nationwide study of factors contributing to development of healthy personalities in children. The investigation is preliminary to the Midcentury White House Conference on Children and Youth which will be held here in 1950. Members of the technical committee include Drs. Leo H. Bartemeier, Leroy E. Burney, Jules V. Coleman, T. Duckett Jones, David M. Levy, Walter B. Martin and Benjamin Spock. Drs. Jones and Spock are members of the national committee for the conference.

### Military Medical Officers Converge in Capital

During the week of November 7 Washington was a converging point for virtually all high ranking medical officers of Army, Navy and Air Force, as well as hundreds of other members of the military medical departments. On November 7 and 8, hospital commanders and other key officers of the three services held separate conferences with their respective surgeons general. On November 9 a joint conference was held at the Naval Medical Center in suburban Bethesda, Md., with Dr. Richard L. Meiling, director of medical services in the Department of Defense, participating in the discussion of common problems. The remainder of the week was devoted to sessions of the Association of Military Surgeons.

### Cancer Grants Approved

Approval of an additional $1,100,000 in federal grants in aid for cancer control and teaching was announced November 9 by the Federal Security Agency, after approval by Dr. Leonard A. Scheele, Surgeon General. A total of $634,971 will be distributed among 26 medical and 11 dental schools. Twenty-two projects concerned with case finding are recipients of $437,203 in cancer control assistance, of which 10 are new grants and 12 are renewals. All but two of the education grants are for continuation of existing projects. Seventy-five of the country's medical schools and 37 dental schools have now received, or will receive, this type of financial assistance under provisions of the National Cancer Act.

## Coming Medical Meetings

American Medical Association Clinical Session, Washington, D. C., December 6-9. Dr. George F. Lull, 535 N. Dearborn, St., Chicago, Secretary.

American Society of Anesthesiologists, New York, Hotel New Yorker, Dec. 7-10. Dr. Curtiss B. Hickcox, 188 W. Randolph St., Chicago 1, Secretary.

Post Graduate Medical Assembly of South Texas, Houston, Nov. 29-Dec. 1. Dr. E. Trowbridge Wolf, 229 Medical Arts Bldg., Houston, Secretary.

Puerto Rico, Medical Association of, San Juan, Dec. 14-18. Dr. Juan Basora-Dehllo, 1459 America St., Santurce, Secretary.

Radiological Society of North America, Cleveland, Dec. 4-9. Dr. Donald S. Childs, 713 E. Genesee St., Syracuse 2, N. Y., Secretary.

Southern Psychiatric Association, New Orleans, Nov. 27-29. Dr. Newdigate M. Owensby, 384 Peachtree St., N.E., Atlanta, Georgia, Secretary.

Southern Society of Electroencephalography, New Orleans, Nov. 30. Dr. Samuel C. Little, 2111 Highland Ave., Birmingham 5, Ala., Secretary.

Southern Surgical Association, Hot Springs, Va., The Homestead, Dec. 6-8. Dr. John C. Burch, 2112 West End Ave., Nashville 5, Tenn., Secretary.

Western Surgical Association, Santa Barbara, Calif., Nov. 29-Dec. 3. Dr. Warren H. Cole, 1853 W. Polk St., Chicago 12, Secretary.

# GOVERNMENT SERVICES

## ARMY

### HIGHER PAY APPROVED FOR ARMY PHYSICIANS

The recently passed Career Compensation Act of 1949 raises the income of medical officers. Major General R. W. Bliss, the Surgeon General, points out that a physician who has completed his internship may be commissioned as a first lieutenant, either in the Regular Army or in the Medical Corps Reserve, and now receive total pay and emoluments amounting to $473.88 a month (if married or with dependents) or $458.88 a month (if single and without dependents). These figures compare with former pay totals of $417 and $361, respectively.

*New Pay Scale**

Monthly Pay and Allowances—Medical and Dental Corps Officers
Years for Pay Purposes

| | Under 2 | Over 2 | Over 4 | Over 6 | Over 8 | Over 10 |
|---|---|---|---|---|---|---|
| Colonel..... | $522.00 | at 16 yr. add $14.25; at 18 yr. add $28.50; thereafter $28.50 each 4 yr. | | | | |
| Lieutenant Colonel.. | 718.00 | at 12, 14 and 16 yr. add $14.25; at 18, 22, 26 yr. add $28.50 | | | | |
| Major..... | 631.75 | 631.75 | 631.75 | 631.75 | $46.69 | $60.25 |
| | | Plus $14.25 increase each 2 yr. through 18 | | | | |
| Captain..... | 545.50 | 545.50 | 559.75 | 574.00 | $88.25 | $92.50 |
| | | Plus $14.25 increase each 2 yr. through 18 | | | | |
| First Lieutenant..... | 472.38 | 486.13 | 500.38 | $16.62 | $30.88 | $45.13 |
| | | Plus $14.25 increase each 2 yr. through 14 | | | | |

* Years credited for pay purposes are total of all commissioned and enlisted service, active or inactive. Pay of single officers $15 (first lieutenants and captains); $22.50 (majors); $30 (lieutenant colonels), less than above amounts for officers with dependents. Interns $100 less than amounts shown. For Veterans Corps, Medical Service Corps, Army Nurses Corps, and Women's Medical Service Corps deduct $100 for determination monthly pay. At 18 years increase majors $28.50; at 22 years increase captains and majors $14.25; at 26 years increase majors $14.25. Effective date of this pay scale, Oct. 1, 1949.

A physician who has acquired sufficient professional experience and who can meet the other requirements may be commissioned directly as a captain or higher. A captain's pay, with emoluments, in the Medical Corps, is now $546 (with dependents) or $531 (without dependents), as against $462 and $426, respectively. On completion of four years of service, a captain receives regular increases at two year intervals.

Comparable increases have been made in the higher grades, thus making the financial rewards of military service commensurate with those of private practice. The new pay scale for postintern physicians, in all grades from colonel to first lieutenant, including quarters and subsistence allowances and the increases accruing from longevity of service, is shown in the table.

### MEDICAL FOLLOW-UP SYSTEM

A patient follow-up system, designed to improve doctor-patient relationship in the Army has been announced by the Surgeon General. The system provides a medical follow-up card on which doctors may receive information concerning the care and disposition of patients with whom they have lost official connection. The card, self addressed on the reverse side, is filled out by the medical officer who wants the information and then accompanies the patient's records to his next hospital. Space is provided for a report on the diagnosis and condition on arrival, subsequent therapy and progress and probable or final disposition. There is also space for the "remarks or recommendations" of the medical officer under whose care the patient has come. The card may also be used by transferred medical officers who want to know the disposition of patients remaining. The card will serve a special purpose for doctors at overseas medical installations. Follow-up information on a patient who is evacuated to the United States for extended or highly specialized care may now be returned to the younger doctor who wants to know the accuracy of his diagnosis and the effectiveness of the treatment he prescribed.

### CONSULTANTS WANT NEW LIBRARY BUILDING

A resolution asking for construction of a new building for the Army Medical Library highlighted the Sixth Annual Meeting of the Association of Honorary Consultants to the Army Medical Library in Washington, October 21. The resolution urged the general services administrator "to draft necessary authorization and to initiate further planning for a new building for the Army Medical Library with all dispatch consistent with the urgency of the need."

Dr. Raymond B. Allen, president of the University of Washington and until recently director of Medical Services, Office of the Secretary of Defense, replaced Dr. George F. Lull on the Executive Committee, which is comprised of four members who serve four year terms on a rotating basis. Major Gen. R. W. Bliss, the Surgeon General, addressed the morning session at the Army Medical Library. Dr. Detlev W. Bronk, president, Johns Hopkins University, was the speaker at the evening session at the Officers' Club, Army Medical Center. His subject was "The Results of Research."

Three former surgeons general of the Army, all retired, were present. They were Major Gen. Robert U. Patterson, Charles R. Reynolds and James C. Magee.

## NAVY

### ACTIVE DUTY FOR RESERVE OFFICERS

The following officers have been nominated for active duty in the Medical Corps Reserve:

Comdr. Howard L. Bergo of Detroit.
Comdr. Samuel S. Shouse, of Appomattox, Virginia, to the Air Force School of Aviation Medicine, Air University, Randolph Field, Texas.
Lieut. Comdr. Lewis D. Williams, Plymouth, Pennsylvania, to the Naval Auxiliary Air Station, Whiting Field, Milton, Fla.
Lieut. (jg) Eugene E. Bleck, Waukegan, Ill., to the Naval Hospital, Vallejo, Calif.
Lieut. (jg) George J. Shimbus, Naperville, Ill., to the Naval Hospital, Portsmouth, Va.
Lieut. (jg) Richard C. Smith, Chicago, to the Naval Medical Research Institute, NNMC, Bethesda, Md.
Lieut. (jg) Earl A. Thompson, San Francisco, Calif., to the Naval Air Station, Anacostia, Washington, D. C.
Lieut. (jg) Joseph A. Witt, Denver, Colo., to the Naval Hospital, Mare Island, Calif.
Lieut. (jg) Collinson P. E. Burgwyn of Petersburg, Va.
Lieut. (jg) James B. Lynch of Brooklyn.
Lieut. (jg) Richard J. Stanwood of Mount View, Calif.
Lieut. (jg) Edwin R. Wallace III of Memphis, Tenn.
Lieut. (jg) Robert T. Whalen of Hempstead, N. Y.

### NEW REGULAR OFFICERS

The following reserve medical officers on active duty have been appointed to the regular Navy Medical Corps:

Lieut. Comdr. Vincent A. Balkus of Philadelphia.
Lieut. Comdr. Richard E. Kelley of Houston, Texas.
Lieut. Comdr. Newell Nay of Santa Barbara, Calif.
Lieut. Alexander C. Hering of Mount Kisco, N. Y.
Lieut. Merrill E. Speelman of Columbus, Ohio.
Lieut. (jg) Ernest A. Balkey of Pawtucket, R. I.
Lieut. (jg) Donald J. Perry of Artissia, N. Mex.
Lieut. (jg) John J. Dempsey of Upper Darby, Pa.
Lieut.(jg) Chester Lesloy Klein of Redlands, Calif.
Lieut. (jg) Everett R. Lerwick of St. Louis.
Lieut. (jg) Robert F. Neal of Elmwood, Tenn.

### PERSONALS

Comdr. W. F. Lyons, U. S. Naval Air Station, Jacksonville, Fla., has recently been certified by the American Board of Preventive Medicine and Public Health.

# AIR FORCE

## BRIGADIER GENERAL KENDRICKS

Edward J. Kendricks, of Alpena, Mich., has been promoted to the rank of brigadier general in the U. S. Air Force. General Kendricks is director of Staffing and Education of the newly created Air Force Medical Service. In 1932 he was graduated from the Army Medical School and the Army Medical Field Service School; in 1934 he entered the School of Aviation Medicine; in 1942 he joined the Ninth Air Force in Cairo, Egypt, as surgeon, and in 1946 he became chief of the Aero-Medical Laboratory at Dayton, Ohio. General Kendricks has been awarded the Legion of Merit with cluster, the Soldier's Medal and the Bronze Star.

## PERSONAL

Brig. Gen. Michael G. Healy, surgeon of the Continental Air Command, Mitchell Air Force Base, New York, was retired October 31, after thirty years of active service.

## TRAINING IN CIVILIAN INSTITUTIONS

A program of advanced training in civilian institutions for medical officers of the Air Force Medical Service in twenty-one fields of medical and dental specialties for the fiscal year 1951 was announced November 1 by Major Gen. Malcolm C. Grow, the Surgeon General.

The majority of courses will be at the graduate level of education, although they may not lead to a graduate degree. Such training is part of the career program established in the Air Force Medical Service and will provide the Air Force with a flow of well trained, qualified personnel. The courses to be offered are: anesthesiology, cardiology, medicine (internal), ophthalmology, radiology, general surgery, dermatology and syphilology, bacteriology and virology, physiology, bacteriology, biologic chemistry, public health, psychology, oral surgery, orthodontia, dental prosthesis, nutrition, physical therapy, occupational therapy and rehabilitation.

# PUBLIC HEALTH SERVICE

## POSITIONS OPEN WITH THE WORLD HEALTH ORGANIZATION

The U. S. Public Health Service has been notified that the World Health Organization is recruiting for the following staff positions:

Chief of Section on Environmental Sanitation
Medical Officer in Charge of Biological Standardization
Medical Officer Venereal Diseases—Serologist
Research Assistant Mental Health Section—Headquarters
Medical Officer—Assistant Chief of Section on Tuberculosis
Consultant in Social and Cultural Aspects of Operational Services
Medical Officer—Venereal Diseases (Assistant Chief of Section)
Regional Adviser on Environmental Sanitation
Regional Medical Adviser on Venereal Diseases
Regional Medical Adviser on Malaria
Regional Medical Adviser on Tuberculosis

For information candidates should communicate with Dr. Fred L. Soper, Regional Director, World Health Organization, 2001 Connecticut Avenue, N.W., Washington 8, D. C. There are at present regional offices also in New Delhi, India, and in Alexandria, Egypt.

## THE THOMAS PARRAN SCHOLARSHIP

Dr. Thomas Parran's former associates in the U. S. Public Health Service have established, through a $5,000 grant, a Thomas Parran Scholarship at the Pittsburgh Graduate School of Public Health. The presentation was made by Dr. Charles L. Williams Sr., Assistant Surgeon General, in the office of the chancellor of the University of Pittsburgh. The principal of the fund will be administered by the University, and from time to time additional contributions will be made. Income from the fund will be used to pay the tuition for at least one student during each session. Funds for the scholarship will be provided by voluntary contributions from present and former personnel of the U. S. Public Health Service in appreciation of the leadership of Dr. Parran in public health, especially during his incumbency as Surgeon General from 1936 to 1948. Among those present at the presentation were the deans of the University of Pittsburgh's schools, the committee on the Pittsburgh Medical Center development, representatives from industrial and educational foundations and the trustees of the Mellon Educational and Charitable Trust. Dr. Parran was named dean of the Graduate School of Public Health, which was established at the University of Pittsburgh in 1948. The offices of the school at present are in the Municipal Hospital; no students have been enrolled as yet, but appointments have been made to the faculty.

## SCHOOL FOR MEDICAL RECORD LIBRARY TRAINING

The U. S. Public Health Service has established the first school for medical record library training in the federal services. The training course is approved by the Council on Education and Hospitals of the American Medical Association. The course includes two years of instruction in the Baltimore Junior College, leading to the degree of Associate in Arts, followed by a year of specialized training in the U. S. Marine Hospital, Baltimore, Md. Students who already have 60 semester hours of class work creditable toward a degree may be accepted for the third year (50 weeks) of specialized training in the hospital. Graduates of this course may be given an opportunity to remain in the Public Health Service, but are not obligated to do so.

Further information may be obtained from the Medical Records Section, Division of Hospitals, U. S. Public Health Service, Washington 25, D. C.

# VETERANS ADMINISTRATION

## NEUROPSYCHIATRIC SEMINAR

John C. Whitehorn, M.D., psychiatrist in chief of the Johns Hopkins Hospital and president-elect of the American Psychiatric Association, will conduct a neuropsychiatric seminar at the Veterans Administration Hospital, Gulfport, Miss., Nov. 26 and 27, 1949, for the residents at that hospital.

## RECORD HIGH HOSPITAL ADMISSIONS

About 53,000 ex-servicemen and women were admitted to Veterans Administration hospitals and hospitals under contract to the Veterans Administration during August, a record high for any one month. Previously, the highest number of admissions was 51,000, during March of this year. About 46,000 of the August admissions were in the general medical and surgical classification.

## PERSONAL

Dr. Ralph Tovell, chief of anesthesiology at Hartford Hospital, Hartford, Conn., has been appointed chairman of the Veterans Administration Professional Service Consultant Group, succeeding Dr. R. Glen Spurling, clinical professor of surgery, University of Louisville, who served in this capacity for two years. During World War II, Dr. Tovell served three and a half years in the Army. He was senior consultant of anesthesia in the European Theater of Operations and was awarded the Legion of Merit.

# PHYSICIANS SEPARATED FROM SERVICE

## ARMY MEDICAL CORPS OFFICERS RECOMMENDED FOR/OR RELIEVED FROM ACTIVE DUTY

### Alabama

Allison, Fred Jr.....Auburn
Owens, Thomas M.....Gadsden
Payne, Edmund C. Jr.....Newcastle
Robinson, Jo. N.....Talladega
Simpson, William H.....Stevenson
Tally, William J.....Stevenson
Wakefield, Jonh R.....Anniston

### Arizona

Gibbons, Glen A.....Phoenix

### Arkansas

Barlow, Donal E.....Dermott
Felts, William R. Jr.....Judsonia
Fotion, George.....Hot Springs
Kilbury, Merlin J. Jr.....Little Rock
Patton, Gerald K.....Little Rock
Schirmer, Jacob F.....Corning
Stewart, James K.....Little Rock
Thompson, James B.....Paris
Thornton, William D.....Forester
Wilkins, Walter J. Jr.....Pine Bluff

### Colorado

Barber, James W.....Denver
Beatty, Eugene C. Jr.....Denver
Knapp, Harry G. R.....Silverton
McMeel, Joseph A. Jr.....Denver
Metcalf, David R.....Boulder
Stiles, Frank C.....Denver

### Connecticut

Carrabba, Salvatore R.....Hartford
Cary, James M.....Hartford
Cooke, Robert E.....New Haven
Kennedy, John J. Jr.....New Haven
Larkin, Charles L. Jr.....Middlebury
Mandell, Marshall.....Norwalk
Minor, James V. Jr.....New Haven

### District of Columbia

Akman, Leonard C.....Washington
Ammerman, Harvey H.....Washington

### Florida

Debusk, Franklin L.....Gainesville
Hodes, Richard S.....Barberville
Knight, Frederick C.....Tampa
McMillan, Jesse C.....Miami

### Georgia

Allgood, Henry P.....Atlanta
Bridges, William L. Jr.....Sumner
Clay, Calder B. Jr.....Macon
Derrick, John R.....Clayton
Duke, Tom W.....Helena
Holliday, Pope B. Jr.....Fort Benning
Lattimore, Thomas J.....Macon
McArthur, Thomas E.....Macon
West, Edward M.....Atlanta

### Idaho

Floyd, Vaun T.....Boise
Roberts, Grover A.....Caldwell

### Indiana

Craig, Reuben A.....Kokomo
Donner, Paul G.....Columbus
Goodall, Robert J.....La Porte
Graf, John P.....Bloomington
Hutchison, Donald R.....Richmond
Kerr, Charles M.....Bloomington
King, Harold.....Bedford
Krieger, James S.....Michigan City
Lafollette, Robert E.....New Salisbury
Lehman, Harold B.....Berne
Mertz, John H. O.....Indianapolis
Parshall, Dale B.....South Bend
Patterson, Jack W.....Indianapolis
Weatherholt, James W.....Fort Wayne
Zeiger, Irvin L.....Indianapolis

### Iowa

Cooper, Dean C.....Fort Dodge
Hall, Gilbert R.....Spirit Lake
Hoyt, John L.....Greenfield
Jones, William E.....Ames
Klunder, Otto J.....Davenport
Kool, Kenneth A.....Iowa City
Kruse, Otto E.....Lisbon
Rutledge, John D.....Emmettsburg
Weih, Jack E.....Clinton

### Kansas

Gans, Frederick A.....Abilene
Peters, Dale W.....McPherson
Smith, William T.....Topeka
Steeples, George L. Jr.....Wichita
Wilder, Lowell E.....Fort Scott
Wolfson, Charles.....Lawrence

### Kentucky

Brewer, McHenry S.....Lebanon
Gullett, Ralph L.....West Liberty
Hunter, Sylvester G.....Ashland
Jones, David M.....Wilmore
Zimmerman, Guy.....Mount Sterling

### Louisiana

Bordelon, Howard M.....Lake Charles
Causey, Wren M. Sr.....New Orleans
Cox, Lawson G.....Minden
Emmett, Robert O.....Lake Charles
Faust, Richard A.....New Orleans
Harris, Erle W.....Shreveport
Jones, Peron O.....Baton Rouge
Kimbrough, Thomas A.....New Orleans
Kroll, Vernon R.....New Orleans
Massony, Angelo A.....Waterproof

### Maine

Sheehy, Thomas J. Jr.....Augusta

### Maryland

Arnold, Gayle G.....Baltimore
Benson, Jean L.....Fort Washington
Goetz, Abraham A.....Hagerstown
Harley, John B.....Brunswick
Sacks, Sidney.....Baltimore

### Massachusetts

Bush, Robert T.....Springfield
Czekanski, Andrew G.....Dorchester
Gamble, James L. Jr.....Brookline
Hoar, Carl S. Jr.....Williamstown
Hurwitz, Joshua J.....Chestnut Hill
Joy, Robert A.....Newton Highlands
Krasner, Bernard.....Quincy
McNally, Joseph T.....Lawrence
Mezer, Robert R.....Newton Center
O'Shea, John J.....Hyde Park
Perkins, John B.....Northampton
Price, Edward B. Jr.....Waban
Robinson, John C.....Blandford
Roy, Louis E.....Southbridge
Scannell, Robert J.....Cambridge
Taylor, Warren J.....Dedham
Young, Eliot.....Saugus

### Michigan

Alger, George D.....Saginaw
Ashe, Robert M.....Detroit
Dickison, George J.....Sault Ste. Marie
Dustin, Richard E.....Tecumseh
Hurley, Albert M.....Saginaw
Kenfield, William J.....Royal Oak
Kline, Hershel A.....Niles
Sargent, Richard C.....Detroit
Van Arsdale, William L.....Marion
Waterman, Donald F.....Grand Rapids

### Mississippi

Hays, Freeman C.....Sherman
Labarre, William E.....Yazoo City
Merritt, Charles W.....Boyle

### Missouri

Deane, Garrett E.....Clayton
Durkee, William R.....Kansas City
Furla, Gus J.....St. Louis
Jones, Ralph H.....Marshall
Lee, Robert E.....Webster Groves
Martt, Jack M.....Clayton
Powell, Edwin M.....Springfield
Salyer, Charles P.....Cassville
Seabaugh, W. O. L.....Cape Girardeau
Shifrin, Alexander.....Kansas City
Stacey, Wallace R.....Sparta
Zimmerman, Joe A.....Kennett

### Montana

Movius, Andrew M.....Billings

### Nebraska

Gatham, Leroy T.....Gurley
Halley, Tullius W.....Scottsbluff
Harman, Leo D.....Pawnee City
Herpolsheimer, Robert W.....Seward
Hinrichs, Edward J.....Omaha
Kuehn, Gerald A.....Fullerton
Maly, James C.....Crofton
Osborn, Donald O.....Omaha

### New Hampshire

Robert, Roger J. P.....Manchester
Shedd, Donald P.....Keene

### New Jersey

Almons, Harold D.....Millburn
Bruno, Anthony J.....Elizabeth
Connar, Richard G.....Rutherford
Darragh, Francis H.....Hawthorne
Felch, William C.....Plainfield
Hutchinson, Harry F.....Englishtown
Knauer, George Jr.....Elizabeth
Miller, Wade N.....West Orange
Moriarty, Joseph F.....Passaic
Primich, Frank J.....Weehawken
Randelman, Arthur H.....Trenton
Reiber, David E.....Bloomfield
Strobel, Vernon E.....Short Hills
Wanderman, Herbert.....Boonton

### North Carolina

Andrews, Leon P.....Wilmington
Bell, William H. Jr.....Newport
Davis, John W.....Charlotte
Flynn, John E.....Tryon
Hare, Roy A.....Durham
Kornegay, Raymond D.....Seven Springs
Larkin, Ernest W. Jr.....Washington
MacBrayer, Lewis B. Jr.....Greensboro
Nicholson, John H.....Greenville
Ogburn, Paul L.....Charlotte

### North Dakota

Dahl, Hattvig A.....Jamestown
Morrow, Thomas F.....North Dakota
Togstad, Theodore.....Maddox

### Vermont

Backup, Clifford E.....Jericho
Elliott, Wilfred T.....St. Johnsbury

### Wyoming

Dixon, Raymond E.....Buffalo

### Hawaii

Chalmers, John F.....Honolulu
Fong, Willis M.....Honolulu
Harada, Thomas T.....Honolulu

### Puerto Rico

Axtmayer, Robert W.....Santurce
De Guzman, Rafael M.....Santurce
Diaz-Bonnet, Rafael B.....Rio Piedras
Padilla, Angel F.....Cabo Rojo

### Mexico

Rish, Benito B.....Mexico City

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# Medical News

(Physicians will confer a favor by sending for this department items of news of general interest: such as raises to society activities, new hospitals, education and public health. Programs should be received at least two weeks before the date of meeting.)

## CONNECTICUT

**Psychoanalytic Fellowships.**—The department of psychiatry, Yale University School of Medicine, New Haven, has received from the Michigan Yale-Phillips Educational Corporation five fellowships of $1,000 each to help defray the expense of psychoanalytic training of young teachers and scientists. Members of the full time faculty and advanced graduate students (residents) of Yale University who are accepted for training at an approved psychoanalytic institute are eligible for application. Applications (five typewritten copies) should be accompanied by a brief curriculum vitae and lists of publications, an explanation why the applicant is interested in psychoanalytic training and a statement of why the applicant seeks such fellowship aid, including the financial necessity for it. Applications will be reviewed by a faculty committee: John A. Dollard, Ph.D., and Drs. Clements C. Fry, Lawrence S. Kubie, Frederick C. Redlich and Milton J. E. Senn. Personal interviews of the applicants by members of the committee may be requested. Applications should be addressed to F. C. Redlich, M.D., 333 Cedar Street, New Haven 11, Conn.

## DISTRICT OF COLUMBIA

**Personal.**—Theodore Koppanyi, Ph.D., professor of pharmacology, Georgetown University School of Medicine, has been elected an honorary member of the Society of Pharmacology and Therapeutics of the Argentine Medical Association.

**Dr. Portmann to Lecture at University.**—Georgetown University Medical Center announces that Prof. Georges Portmann of the University of Bordeaux, France, will give his annual course in otorhinolaryngology, esophagoscopy, bronchoscopy and surgery of the neck in Washington for two weeks beginning April 17, 1950. For information communicate with Dr. James A. Flynn, 1511 Rhode Island Avenue N.W., Washington, D. C.

## ILLINOIS

**Operation Catch.**—The University of Chicago's research project (Operation Catch) in tuberculosis-like diseases has been extended to include 11 southern Illinois colleges and high schools. A unit in the nationwide program of skin testing and roentgen study of young adult populations, Operation Catch (calcification, tuberculin, coccidioidin, and histoplasmin) is sponsored by the University of Chicago, the U. S. Public Health Service and the Illinois Department of Public Health. Miniature roentgenograms and tuberculin and histoplasmin skin tests will be taken in a study to determine the prevalence among students of tuberculosis-like diseases. A mobile x-ray unit, headed by Dr. William C. Beadenkopf, Dr. J. Thomas Grayston and Dr. Jeanne M. Ward of the University of Chicago Clinics, was sent out October 23 for a three week program in southern Illinois. Emphasis in the survey will be placed on histoplasmin sensitivity. On the southern Illinois trip the University of Chicago staff of three doctors and two nurses expected to examine daily 500 students and faculty members who volunteer for the tests.

### Chicago

**Joint Branch Meeting.**—The North Side Branch of the Chicago Medical Society will hold a joint meeting with the Northwest Side Branch December 1 at 6:30 p. m. at the Drake Hotel. Dr. Samuel F. Marshall, Lahey Clinic, Boston, will speak on "Gastric Surgery" and Dr. Walter L. Palmer, University of Chicago, on "The Treatment of Peptic Ulcer."

**Lecture—Is the Welfare State the Farewell State?**—Dr. Herman L. Kretschmer, clinical professor of urology (Rush) emeritus, will deliver the presidential address at the annual meeting of the Institute of Medicine of Chicago December 6 at the Furniture Club of America, 666 N. Lakeshore Drive. His subject will be "Is the Welfare State the Farewell State?"

**Personals.**—Dr. Theodore Cornbleet and Dr. Theodore J. Wachowski have been promoted to the rank of professors at the University of Illinois College of Medicine.——Dr. Michael H. Streicher spoke before the Section on General Practice of the Los Angeles County Medical Association September 15 on "Clinical Approach in the Management of Infectious Diseases of the Colon."——Leonard B. Nice, Ph.D., professor of physiology and pharmacology at the Chicago Medical School, has been elected secretary of the Illinois section of the Society for Experimental Biology and Medicine.

**Census of Arthritics.**—Through the cooperation of the local press and radio the Illinois Chapter of the Arthritis and Rheumatism Foundation is conducting a census of arthritic persons in the Chicago area. Those who suffer from arthritis are asked to communicate with the Illinois Chapter, which then mails the arthritic subject a questionnaire to be filled in with data concerning medical history, heredity, environment and other factors. The office address is 69 West Washington Street.

**Joseph A. Capps Prize.**—The Institute of Medicine of Chicago is offering the Joseph A. Capps Prize of $400, founded by Dr. and Mrs. Edwin R. LeCount, for the most meritorious investigation in medicine. The investigation may also be in the fundamental sciences, provided the work has a definite bearing on some medical problem. Competition is open to graduates of Chicago medical schools who completed their internship or one year of laboratory work in 1947 or thereafter. Manuscripts must be submitted to the secretary of the Institute of Medicine of Chicago, 86 East Randolph Street, Chicago 1, not later than December 31.

## KENTUCKY

**Hospital News.**—Construction of a four story annex, costing $450,000, to the Good Samaritan Hospital at Lexington will be started this fall. The new unit will have 60 beds, which will increase the hospital's bed capacity to 350. The third floor will be a maternity ward, and the new wing will be designed to form an extension to the present maternity section, bringing the total number of bassinets from 35 to 50. The surgery section will be modernized to include air-conditioning equipment for all operating rooms.

**Physicians Honored at State Meeting.**—Dr. John Walker Moore, Louisville, retired dean of the University of Louisville School of Medicine, was awarded a medal for outstanding medical services at the public meeting held in connection with the annual convention of the Kentucky State Medical Association at Owensboro in October. The E. M. Howard Medal for distinguished medical service was presented to Dr. Addie M. Lyon, state welfare commissioner, and J. Watts Stovall, Grayson, and the award for a general practitioner to Dr. John M. Clayton, West Louisville.

## MAINE

**Cooperative Graduate Study at Jackson Laboratory.**—The Roscoe B. Jackson Memorial Laboratory is beginning its fall program of cooperative graduate study, which makes the laboratory's research facilities available, without tuition fee, to qualified graduate students. Credits for work at the Jackson Laboratory may be applied toward masters or doctors degrees in biology, zoology, bacteriology, genetics, psychology or allied fields. The research program of Jackson Laboratory includes many projects dealing with tumor-inciting agents and tumor immunity, the genetics of normal growth, animal behavior, endocrinology and physiology. Cooperating graduate schools to date include: Northwestern University, University of Chicago, University of Illinois, Johns Hopkins University, Harvard University, University of Michigan, Washington University, Cornell University, University of Rochester, Ohio State University, University of Maine, Pennsylvania State College and Brown University. Arrangements may usually be made at other schools, though individual consideration is always necessary. The cooperative program is approved for the subsistence and other allowances under the G. I. Bill of Rights. There are also at times assistantships available for well qualified students, and the laboratory will assist students in securing predoctoral fellowships such as those offered by the National Institutes of Health and the American Cancer Society. Direct inquiries to Chairman, Committee on Graduate Study, R. B. Jackson Memorial Laboratory, Box 78, Bar Harbor, Maine.

Dr. Leslie C. Dunn, Sc.D., head of the genetics department of Columbia University, has been named president of the new board of scientific directors of the Roscoe B. Jackson Memorial Laboratory in Bar Harbor. Other members include Dr. James B. Murphy, head of the Cancer Research Department of the Rockefeller Institute, New York, as vice president; Clarence C. Little, LL.D., director, Jackson Memorial Laboratory; Frank A. Beach, Ph.D., professor of psychology at Yale University, New Haven, Conn.; Homer W. Smith, Sc.D., professor of physiology at New York University; Merle A. Tuve, Ph.D., physics professor at Johns Hopkins University, Baltimore; Edwin B. Wilson, Ph.D., Brookline, Mass., vice president of the National Academy of Sciences, and Sewall Wright, Sc.D., professor of genetics at the University of Chicago.

## MICHIGAN

**Personal.**—Dr. Leo H. Bartemeier, associate professor of psychiatry at Wayne University College of Medicine, Detroit, and secretary of the American Psychoanalytic Association, was guest of honor at a dinner given by members of the Detroit Psychoanalytic Society on the occasion of his election as president of the International Psychoanalytic Association in Zurich, Switzerland, August 18.

**Million Dollar Grant for Kresge Science Library.**—A million dollar grant from the Kresge Foundation to Wayne University, Detroit, to erect the Kresge Science Library building has been announced. It will be the first Wayne University structure to be financed by private philanthropy. The three story building will house the university's Kresge-Hooker scientific collection, one of the world's most complete chemical libraries, and other scientific books and periodicals. Since the new library, to be located on the east side of Second Avenue, between Merrick and Kerby, will be near the Technology Department of the Detroit Public Library, the city will have in one center facilities for science study and research. The library will provide study space for 400 undergraduate students and 235 university faculty members, industrial research workers, visiting scholars and advanced students. Stack space will accommodate the present 50,000 science volumes and 800 science periodicals, as well as future accessions, and there will be a complete microfilm laboratory for recording materials which could not be made available without such special facilities, seminar rooms and a lecture room. The Hooker Library was brought to Wayne from Central College, Missouri, in 1943, when the Kresge Foundation contributed $100,000 of a $200,000 fund for that purpose. The library, which includes irreplaceable sets of science journals, was originally assembled by Dr. Samuel Cox Hooker, a distinguished chemist. Later designated as the Kresge-Hooker Scientific Library, the collection has occupied inadequate quarters in a corner of Wayne's main building. The new Kresge Science Library building will be integrated with the total University library service program.

## NEW MEXICO

**Death from Bubonic Plague.**—The Associated Press reported from Santa Fe November 8 that bubonic plague caused a death in the southern part of the state. The state health department, according to the report, said the victim was a 7 year old boy of San Patricio, a village 50 miles west of Roswell. He died at the U. S. Marine Hospital at Fort Stanton, where the disease was diagnosed. Two cases of plague were traced to wild rodents in northern New Mexico early this summer. The victims recovered after treatment (THE JOURNAL, Sept. 24, page 274).

## NEW YORK

**Society Election.**—The Brooklyn Dermatological Society at its recent meeting elected the following officers for the current year: Drs. Irving N. Holtzman, president; Moses Silverman, vice president, and Samuel I. Greenberg, secretary-treasurer. This year is the twenty-fifth anniversary of the founding of the society.

**Dr. Raus Heads Department at Syracuse.**—Dr. George M. Raus, for the last two years associated with the Institute of Rehabilitation and Physical Medicine, New York University–Bellevue Medical Center, has been appointed head of the new department of rehabilitation and physical medicine at Syracuse University College of Medicine. Dr. Raus will survey the upstate area to learn what present facilities are and how they can be augmented. He will serve in a consulting capacity to various clinics and departments of the medical center.

### New York City

**Fellowship in Hospital Administration.**—The S. S. Goldwater Fellowship in Hospital Administration at Mount Sinai Hospital has been awarded to Mr. William L. Agress, assistant director of the Brooklyn Tuberculosis and Health Association. The fellowship provides for a stipend, full maintenance in the hospital, supervised participation in its management, work visits to other hospitals and study at Mount Sinai's library of Dr. Goldwater's writings on institutional administration and planning.

**Academy Donates 12,000 Books.**—The New York Academy of Medicine has announced its donation of 12,000 volumes to Southwestern Medical College in Dallas, Texas. These volumes are the larger portion of a gift of 20,000 volumes received by the New York Academy of Medicine in 1900 from the New York Public Library when the academy in effect took over the medical part of the city library service. Southwestern Medical College, founded in 1943, is in the process of building up its library.

**Symposium on Inhalation Therapy.**—The Committee on Public Health Relations of the New York Academy of Medicine, in cooperation with the New York Association of Oxygen and Ambulance Services, will present a symposium on inhalation therapy, consisting of exhibits, demonstrations, motion pictures and lectures, at the Academy building, December 5-10. The purpose of the symposium is to bring to physicians, as well as to hospital administrators, resident staffs and nurses, information as to recent developments in this aspect of therapy and the efficient use of the equipment available for it. Subjects of succeeding evening lectures, which begin at 8:30 p. m., are: Anoxia in Clinical Medicine; Pediatric Aspects of Inhalation Therapy; Asthma, Comatose States and Infantile Paralysis and Their Treatment by Inhalation Therapy and Respirators; Inhalation Therapy in the Treatment of Cardiac Diseases, and Inhalational and Aerosol Therapy in Pneumonia, Pulmonary Edema and Bronchiectasis.

## OHIO

**Dr. Kleinschmidt Receives Prentiss Award.**—Dr. Harry E. Kleinschmidt, New York, received the 1949 Elisabeth Severance Prentiss National Award in Health Education November 14. Given annually since 1944 by the Cleveland Health Museum, the award serves to honor the memory of the museum's first foundation benefactor, and to encourage outstanding work in the field of health. Dr. Kleinschmidt was formerly director of health education for the National Tuberculosis Association (1927-1942) and more recently medical director of the North Atlantic Area, American Red Cross (1942-1949).

**Cerebral Palsy Center.**—Bowling Green State University opened its new Cerebral Palsy Center October 10 with 12 children from the state selected to undergo therapy. The university and the Ohio Society for Crippled Children are co-sponsors of the center. Part of the work of university students of speech and hearing therapy will be at the center. Miss Adeline McClelland, director of the Speech and Hearing Clinic at the university, will be also director of the center. The clinic and center are housed in the north wing of the new $180,000 speech building. A $35,000 dormitory is being erected to house clinic patients. Consultants provided for the Bowling Green center by the Ohio Society for Crippled Children are Dr. Winthrop M. Phelps, at the Children's Rehabilitation Center, Cockeysville, Md.; Harold Westlake, Ph.D., director of the Speech and Hearing Clinic at Northwestern University, Chicago; Drs. Albert L. Bershon and Jack W. Millis, orthopedists of Toledo, and Dr. Frank V. Boyle, Bowling Green, medical consultant.

## PENNSYLVANIA

**Society Election.**—At the annual dinner meeting of the Pennsylvania Psychiatric Society held in September the following officers were elected: Drs. Harold L. Mitchell, Pittsburgh, president; Arthur P. Noyes, Norristown, president-elect, and Philip Q. Roche, Philadelphia, secretary-treasurer.

**Course in Electrocardiography.**—Sixty Pennsylvania physicians from 40 counties have enrolled for a special study of electrocardiography arranged by the Medical Society of the State of Pennsylvania and being held on seven consecutive Thursdays, beginning November 10 in the Nurses' Auditorium of the Harrisburg Hospital. The faculty will consist of Drs. Thomas M. Durant, professor of clinical medicine, Temple University School of Medicine, Philadelphia; John B. Levan, chief, cardiac clinic, St. Joseph's Hospital, Reading; Charles W. Smith, Constantine P. Faller and Kenneth E. Quickel, all of Harrisburg Hospital.

## TEXAS

**Personal.**—Dr. Curtis H. Baylor, formerly professor of medicine at the American University in Beirut Lebanese Republic, is now associated with the Texas Company as assistant medical director and is in charge of the clinical services of the company at the home office in New York.

**Gift to Cancer Hospital.**—The M. D. Anderson Hospital for Cancer Research, Houston, has received a gift of more than $250,000 through the will of the late William Heuermann, San Patricio County farmer. A fund of $5,000 to buy radium for use in cancer treatment in Corpus Christi is also provided.

**University Appointments.**—The University of Texas Medical Branch, Galveston, has announced the following appointments to the staff; Marcella Frantz, Ph.D., assistant professor of anatomy; John G. Bieri, Ph.D., assistant professor of bacteriology and parasitology; Austin Foster, Ph.D., assistant professor of neuropsychiatry, in charge of clinical psychology; Dr. Charles C. Morris II, Baltimore, assistant professor of pediatrics, and Dr. Earl B. Ritchie, Galveston, associate professor of dermatology and syphilology.

## VIRGINIA

**State Medical Election.**—At the recent meeting of the Medical Society of Virginia the following officers were elected: Drs. Walter C. Caudill, Pearisburg, president, and C. Lydon Harrell of Norfolk, president-elect. Agnes V. Edwards is executive secretary-treasurer.

**Students Choose General Practice.**—A committee of the Medical College of Virginia, Richmond, interviewed each of its 92 senior medical students to aid them in the choice of a place to intern. It was discovered that 53.26 per cent of the students indicated an intention to enter general practice. In addition, 3.26 per cent of the 92 students were considering general practice as against surgery, and 1.09 per cent were undecided as to general practice or obstetrics.

This trend of medical students toward entering general practice is evident also among the freshman medical students at the Medical College of Virginia.

## PUERTO RICO

**BCG Vaccination Program.**—Dr. Harold S. Barrett, chief, vaccination section, U. S. Public Health Service, is supervising the training program for vaccination with BCG in Puerto Rico now in progress. Vaccination of school children throughout the island started October 6. It is estimated that about 800,000 children will undergo tests during the two years of the BCG vaccination program and that about 300,000 children will be vaccinated with BCG. Lectures and demonstrations on the application of tests and BCG vaccination technics will be given at the School of Tropical Medicine. Training will be offered to two medical supervisors. During the first year of the program all school children will be vaccinated with BCG, including children of school age who are not attending classes. During the second year, children of preschool age, including infants, will be vaccinated. Technicians from the U. S. Public Health Service are assisting in this training course.

## GENERAL

**Western Surgical Association Meeting.**—The annual meeting of the Western Surgical Association will be held in Santa Barbara, Calif., with headquarters at the Biltmore, November 29-December 2, under the presidency of Dr. Robert L. Sanders, Memphis, Tenn. Among the speakers will be Sir Heneage Ogilvie, London, England.

**Pamphlet Available on Graduate Medical Work.**—The pamphlet "Fellowships, Funds and Prizes Available for Graduate Medical Work in the United States and Canada" has been brought up to date and published by the Association of American Medical Colleges, 5 South Wabash Avenue, Chicago 3. Individuals may secure a copy for $1.

**Meeting on History of Medicine.**—The American Association of the History of Medicine will hold its next annual meeting in Boston May 21-23, 1950, with headquarters at the Somerset Hotel. Members of this association who wish to submit papers for consideration should communicate with the Chairman of the Program Committee, Dr. Harold Bowditch, 44 Harvard Avenue, Brookline, Mass. No papers will be considered after Jan. 15, 1950.

**Pharmaceutical Association Elects Officers.**—The American Pharmaceutical Association reports that the following officers have been elected by mail ballot and will be installed at the annual convention in Atlantic City next spring. Henry H. Gregg, Minneapolis, president-elect; Roy A. Bowers, Albuquerque, N. Mex., first vice president-elect, and Louis J. Fischl, Oakland, Calif., second vice president-elect. Present officers of the association are: Glenn L. Jenkins, Ph.D., Lafayette, president; Harold C. Kinner, Washington, D. C., first vice president, and Leib L. Riggs, Portland, Ore., second vice president. The secretary and treasurer are elected by the house of delegates.

**Markle Foundation Grants.**—Grants totaling about $940,000, the majority payable over five years, were made to medical colleges and other educational institutions by the John and Mary R. Markle Foundation in the eighteen months beginning January 1948. Among the institutions receiving grants were The Bowman Gray School of Medicine of Wake Forest College, Winston Salem, N. C., $32,800; Duke University School of Medicine, Durham, N. C., $50,800; New York University College of Medicine, $27,500; Medical College of Virginia, Richmond, $34,300; University of Illinois College of Medicine, Chicago, $33,000; Washington University School of Medicine, St. Louis, $35,500; Yale University School of Medicine, New Haven, Conn., $62,000; University of Pennsylvania School of Medicine, Philadelphia, $50,000; University of California, Berkeley, $15,000, and Association of American Medical Colleges, for support of the Medical Film Institute, $22,500.

**Society Elections.**—The American Society of Physical Medicine has elected the following officers: Dr. Charles O. Molander, Chicago, president; Dr. Frances Hellebrandt, Richmond, Va., president-elect, and Dr. Max K. Newman, Detroit, secretary-treasurer.——The Southwestern Surgical Congress in September chose the following officers for the coming year: Drs. Thomas G. Orr, Kansas City, Mo., president; Leo J. Starry, Oklahoma City, president-elect, and Charles R. Rountree, Oklahoma City, secretary-treasurer.——The American College of Surgeons at its meeting in October chose the following officers for the coming year: Drs. Frederick A. Coller, Ann Arbor, Mich., president; Henry W. Cave, New York, president-elect; Paul B. Magnuson, Chicago, secretary, and Warren H. Cole, Chicago, treasurer.

**Greek Doctor Receives Woman's Fellowship Award.**—Dr. Marion D. Kolbye, chairman of the Fellowship Committee of the American Federation of Soroptimist Clubs, has announced the award of a $3,000 fellowship to Dr. Dora Papara of Athens, Greece, for study at the University of Pennsylvania Medical School, Philadelphia. The Soroptimist International Association, numbering in its American federation 11,000 executives and professional women in the United States, Canada and South America, has set up a fellowship fund to encourage progress in distinctive fields of endeavor. Dr. Papara was selected for her achievements in neuropsychiatric treatment of abnormal children. She was appointed to her present position as chief of the Psychiatric Clinic of the Public Asylum in Athens in 1944.

**Awards for Scientific Stories.**—The National Society for Medical Research held a contest to stimulate the writing and publication of accounts which tell the story of medical research. "Blue Baby Research," a story published by *Life* magazine, received the first prize of $500, and a $100 runner-up award went to Herbert Yahraes of Stanfordville, N. Y., author of "Science Tries You Out on the Dog," published in *Popular Science*. The judges who chose the best published research story were Drs. Rolla E. Dyer, director of the National Institutes of Health, and Morris Fishbein, Editor of THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION; Steven Spencer, associate editor of the *Saturday Evening Post*; David Dietz, science editor of the Scripps-Howard Newspapers, and Watson Davis, director of "Science Service."

**Course for Employment and Placement Counselors.**—Alpha Gamma Delta, international women's fraternity, and the National Society for Crippled Children and Adults have named seventeen persons as recipients of fellowships to attend a training course for employment and placement counselors working with the cerebral palsied and other severely handicapped persons. The fellowships, $350 each, are awarded through a grant from the fraternity and will pay tuition and maintenance during the four week course which began on November 7 and will continue through December 2. The course will be held at the Institute of Rehabilitation and Physical Medicine, New York University. This is the second such course held this year designed to better equip counselors to meet employment and placement problems of the handicapped.

**Brookhaven National Laboratory.**—The appointment of Dr. Donald D. Van Slyke as assistant director for biology and medicine and Dr. Lee E. Farr as chairman of the medical department at Brookhaven National Laboratory, Upton, Long Island, N. Y., has been announced. Dr. Van Slyke is a member emeritus of the Rockefeller Institute for Medical Research, with which he has been associated since 1907. He is the recipient of an honorary M.D. from the University of Oslo, the Willard Gibbs medal from the American Chemical Society and the Kober Medal of the Association of American Physicians. He is editor of the *Journal of Biological Chemistry*. Dr. Farr is at present director of research and pediatrician in chief of the Alfred I. duPont Institute of the Nemours Foundation in Wilmington, Del. He received his M.D. degree from Yale University School of Medicine, New Haven, Conn., in 1933. From 1934-1940 he was at the Hospital of the Rockefeller Institute for Medical Research in Dr. Van Slyke's department. He received a Mead Johson Award of the American Academy of Pediatrics for research on children with nephrosis.

The staff of the medical department for Brookhaven National Laboratory is being selected so that active investigative work on the fundamental problems of medicine and studies on patients with selected types of malignant disease and conditions related to cancer may begin this fall. A completely equipped modern hospital of 42 beds will be available for these purposes.

**Medical Research Fellowships.**—The medical fellowship board of the National Research Council is now accepting applications for the postdoctoral research fellowships for 1950-1951 under the following program: National Research Fellowships in the Medical Sciences, supported by grants from the Rockefeller Foundation, provide opportunities for experience in research in all branches of medical science. They are open to citizens of the United States or of Canada who hold an M.D. or Ph.D. degree and who, as a rule, are not more than 30 years of age. Welch fellowships in internal medicine, also supported by the Rockefeller Foundation, provide a prolonged period of advanced training to persons of proved research ability. They are open to physicians under 40 years of age who are citizens of the United States. Fellowships in poliomyelitis and related fields are supported by the National Foundation for Infantile Paralysis, Inc. They provide training and experience in the study of virus diseases and in any field contributing to progress in orthopedic surgery. Candidates for fellowships in virus diseases must hold an M.D. or Ph.D. degree. Fellowships in orthopedic surgery are open only to graduates in medicine who have completed one or more years of hospital work in clinical surgery. Applicants must be citizens of the United States. Senior fellowships in poliomyelitis and related fields are also available under grants from the National Foundation for Infantile Paralysis, Inc. Senior fellowships in the field of virus diseases are open to physicians and to holders of the doctorate in the basic sciences; applicants in the four other fields must be graduates in medicine. Fellowships in anesthesiology have been made available by a grant from the American Society of Anesthesiologists. Applicants must have an M.D. degree and at least one year of hospital experience. Fellows will be appointed at a meeting of the Medical Fellowship Board early in March 1950. Applications may begin at any date determined by the Board. For information about these fellowships, address the secretary of the Medical Fellowship Board, National Research Council, 2101 Constitution Avenue, N.W., Washington 25, D. C.

**Lasker Awards for 1949.**—For distinguished accomplishments in medical research and public health administration the 1949 Lasker Awards of the American Public Health Association were conferred on eight persons and two organizations at the annual meeting of the association in New York, October 25. Dr. Haven Emerson, New York, past president, American Public Health Association, and treasurer of the National Health Council, was given a Special Lasker Award "for extraordinary achievement in developing a program of complete local health service in every area of the U. S." An award for outstanding administrative achievement was given to: Miss Marion W. Sheahan, R.N., executive director of the National Committee for the Improvement of Nursing Services, was cited "for distinguished leadership in the fields of nursing and public health." Miss Sheahan is the first non-doctor award recipient. Two other women, Dr. Alice H. Hamilton and Dr. Martha M. Eliot, are former recipients.

Awards for scientific research and accomplishment went to: Dr. Andre Cournand of Columbia University College of Physicians and Surgeons, New York, "for outstanding contributions to the physiology of the circulation in man and the diagnosis and treatment of heart disease"; Dr. Max Theiler of the Rockefeller Foundation "for distinguished experimental work leading directly to the production of two effective vaccines against yellow fever"; Dr. William S. Tillett and L. R. Christensen, Ph.D., of the New York University College of Medicine, jointly, "for the discovery and purification of streptokinase and streptodornase and demonstration of their effectiveness in treatment of certain human diseases," and Edward C. Kendall, Ph.D., and Dr. Philip S. Hench of the Mayo Clinic, Rochester, Minn., "for their chemical, physiologic and clinical studies of adrenal hormones, which culminated recently in the dramatic therapeutic effect of Cortisone in rheumatic disorder."

Lasker Group Awards this year honored: The American Academy of Pediatrics, "for studies of personnel and facilities for the protection of child health," and The Life Insurance Medical Research Fund, "for initiation and support of a program of research into the main cause of disease, cardiovascular disease."

Dr. Emerson's Special Lasker Award consists of $2,500 and a gold statuette on a white ivory base. Individual winners received $1,000 each and a gold statuette.

The 1949 Albert and Mary Lasker Foundation Awards of the Planned Parenthood Federation of America were presented to Dr. George M. Cooper, head of the Division of Preventive Medicine, North Carolina Health Department, and Carl G. Hartman, Ph.D., zoologist. The award to Dr. Cooper recognizes that through his efforts North Carolina became the first state to include birth control in its public health services. The award to Dr. Hartman was for research in embryology and reproduction. The awards, consisting of $500 each and a medallion, were presented October 26 at the federation's annual luncheon in New York.

**Prevalence of Poliomyelitis.**—Reports of cases of poliomyelitis for the periods indicated have been received from the National Office of Vital Statistics, U. S. Public Health Service.

| Division and State | Week Ended Nov. 5, 1949 | Week Ended Nov. 6, 1948 | Median 1944-1948 | Jan. 1 to Nov. 5, 1949 | Jan. 1 to Nov. 6, 1948 |
|---|---|---|---|---|---|
| **New England States** | | | | | |
| Maine | 6 | 1 | 2 | 443 | 38 |
| New Hampshire | .. | .. | 1 | 181 | 18 |
| Vermont | 3 | .. | 1 | 188 | 22 |
| Massachusetts | 29 | 9 | 9 | 1,722 | 161 |
| Rhode Island | 10 | .. | 1 | 161 | 6 |
| Connecticut | 15 | 1 | 6 | 560 | 113 |
| **Middle Atlantic States** | | | | | |
| New York | 126 | 43 | 43 | 5,198 | 1,364 |
| New Jersey | 51 | 42 | 13 | 1,402 | 757 |
| Pennsylvania | 29 | 24 | 15 | 783 | 604 |
| **East North Central States** | | | | | |
| Ohio | 22 | 28 | 28 | 1,083 | 1,102 |
| Indiana | 16 | 9 | 8 | 1,464 | 375 |
| Illinois | 44 | 23 | 23 | 2,749 | 1,030 |
| Michigan | 63 | 29 | 24 | 2,631 | 691 |
| Wisconsin | 25 | 30 | 30 | 1,010 | 569 |
| **West North Central States** | | | | | |
| Minnesota | 25 | 71 | 12 | 1,881 | 1,222 |
| Iowa | 15 | 65 | 18 | 1,088 | 1,084 |
| Missouri | 18 | 8 | 13 | 1,209 | 282 |
| North Dakota | 1 | 2 | .. | 440 | 115 |
| South Dakota | 1 | 111 | 1 | 355 | 637 |
| Nebraska | 18 | 11 | 7 | 617* | 674 |
| Kansas | 10 | 5 | 5 | 694 | 266 |
| **South Atlantic States** | | | | | |
| Delaware | 1 | 1 | 1 | 43 | 139 |
| Maryland | 12 | 6 | 7 | 249 | 308 |
| District of Columbia | 3 | 3 | 1 | 102 | 126 |
| Virginia | 9 | 21 | 6 | 317 | 339 |
| West Virginia | 7 | 6 | 4 | 335 | 159 |
| North Carolina | 2 | 17 | 12 | 216 | 2,419† |
| South Carolina | 2 | 3 | 1 | 160 | 358 |
| Georgia | 10 | 11 | 3 | 211 | 226 |
| Florida | 9 | 5 | 4 | 237 | 250 |
| **East South Central States** | | | | | |
| Kentucky | 14 | 8 | 6 | 416 | 198 |
| Tennessee | 7 | 9 | 9 | 508 | 339 |
| Alabama | 6 | .. | .. | 232 | 260 |
| Mississippi | 2 | 1 | 3 | 316 | 149 |
| **West South Central States** | | | | | |
| Arkansas | 15 | .. | .. | 951 | 134 |
| Louisiana | 1 | 4 | 4 | 216 | 138 |
| Oklahoma | 24 | 5 | 5 | 1,240 | 344 |
| Texas | 52 | 25 | 8 | 2,175 | 1,838 |
| **Mountain States** | | | | | |
| Montana | 2 | 1 | 1 | 91 | 68 |
| Idaho | 17 | 3 | 3 | 464 | 104 |
| Wyoming | .. | 4 | 1 | 194 | 76 |
| Colorado | 19 | 6 | 4 | 673 | 1,160 |
| New Mexico | 4 | .. | 2 | 194 | 75 |
| Arizona | 4 | 7 | 1 | 149 | 145 |
| Utah | 11 | 8 | 7 | 280 | 113 |
| Nevada | .. | .. | .. | 15 | 7 |
| **Pacific States** | | | | | |
| Washington | 14 | 18 | 9 | 555 | 320 |
| Oregon | 11 | 3 | 3 | 275 | 162 |
| California | 79 | 276 | 36 | 2,254 | 4,488 |
| Total | 881 | 954 | ... | 39,045* | 34,272† |
| Median, 1944-1948 | ... | ... | 451 | 17,886 | |

* Includes 11 delayed reports.
† Figures changed by corrected reports.

## Marriages

WILLIAM JAMES HARGREAVES, Johnstown, Pa., to Miss Audrey Louise Foster of Altoona, September 1.

WILLIAM WARNER SHINGLETON, Durham, N. C., to Miss Katherine Jane Bruce at Palatka, Fla., August 4.

BENJAMIN LEIGHTON, Long Beach, N. Y., to Miss Ruth Weisel in New York, September 18.

MASON COOKE ANDREWS, Baltimore, to Miss Sabine Goodman of Jacksonville, Fla., recently.

PAUL P. NORMAN, Malden, Mass., to Miss Esther Rosalind Brody of Allston, August 28.

BERNARD B. SHUER, Brooklyn, to Miss Estelle Rose Drukker in New York, September 11.

WILLIAM TAFFET, Belleville, N. J., to Miss Sylvia Tulchinsky at Newark, August 14.

LEWIS COHEN, Detroit, to Miss Betty Bosniak of Brooklyn, August 7.

# Deaths

**John D. Long** ● medical director, U. S. Public Health Service, retired, Guayaquil, Ecuador, South America; University of Pennsylvania Department of Medicine, Philadelphia, 1897; born in Mount Pleasant, Pa., Feb. 12, 1874; commissioned in the U. S. Public Health Service April 9, 1900; during his nearly forty years with the public health service, was in charge of the Plague Suppressive Laboratory in San Francisco from 1912 to 1914 and in Manila on two assignments from 1901 to 1906 and from 1914 to 1918; during the second assignment chief quarantine officer and later director of health for Manila and also professor of hygiene at the University of the Philippines; reorganized the Philippine health services; technical advisor to the minister of hygiene in Santiago, Chile from 1925 to 1927, when he became chief quarantine officer for the Panama Canal Zone, serving until 1928; when on detail from the public health service to the Pan American Sanitary Bureau in 1929, went to Guayaquil to assist in plague eradication; on retirement from the public health service in 1938, became chief traveling representative of the Pan American Sanitary Bureau; a fellow of the American Public Health Association; member of the Association of Military Surgeons of the United States, Alpha Mu Pi Omega fraternity and other scientific societies; decorated with El Merito by Chile and Ecuador, with the Order of Carlos Finlay by Cuba, El Sol by Peru and Vasco Nunez de Balboa by Panama; in 1929 awarded the honorary degree of doctor of science by Washington and Jefferson College of Washington, Pa.; co-author of the Pan-American Sanitary Code; from 1925 to 1927 was vice president of the Far Eastern Association of Tropical Medicine and was instrumental in reorganizing the Chilean health service; died September 18, aged 75.

**Louis Simonson**, Newark, N. J.; born in New Haven, Conn., Aug. 6, 1885; Tufts College Medical School, Boston, 1908; also a pharmacist; specialist certified by the American Board of Pediatrics; fellow of the American Academy of Pediatrics; member of the American Medical Association, Academy of Medicine of Northern New Jersey and the Essex County Medical Society, where he was chairman of the committee on communicable diseases; served as a school physician and was on the staff of the division of child hygiene; at one time district physician for the city health department; while in Bridgeport served as plant surgeon for the Singer Manufacturing Company, the Dictaphone Corporation, the Bridgeport Brass Company and the Columbia Phonograph Company; for many years affiliated with the Newark Beth Israel Hospital and at the time of his death a member of the staffs of the Newark City and Babies hospitals; for twenty years medical examiner for the Prudential Insurance Company; died September 4, aged 64, of carcinoma of the descending colon.

**Lewis Theodore Arthur** ● Covington, Ohio; Medical College of Ohio, Cincinnati, 1904; served during World War I; died September 8, aged 72, of arteriosclerosis.

**Guy Gabriel Aycock**, Franklin, La.; Memphis (Tenn.) Hospital Medical College, 1912; sheriff of St. Mary Parish; served one term as coroner; died in New Orleans September 9, aged 61, of coronary occlusion.

**Emma F. Macomber Ayres**, Lynn, Mass.; New York Medical College and Hospital for Women, Homeopathic, New York, 1888; died September 5, aged 95.

**Thomas Bagley**, Santa Ana, Calif.; University of Buffalo School of Medicine, 1889; member of the Medical Society of the State of New York and the American Medical Association; formerly practiced in Buffalo, where he was on the staff of the Buffalo General Hospital; died September 17, aged 96, of cerebral arteriosclerosis.

**Seneca Bray Bain**, Silver Spring, Md.; National University Medical Department, Washington, D. C., 1899; also a dentist; member of the Medical Society of the District of Columbia and the American Medical Association; died September 3, aged 75.

**John Francis Barker**, Huntington, W. Va.; University of Kansas School of Medicine, Kansas City, 1934; member of the American Medical Association and the American Urological Association; specialist certified by the American Board of Urology; served during World War II; died September 30, aged 44, of coronary occlusion.

**William Henry Beery**, Lima, Ohio; Hahnemann Medical College and Hospital of Philadelphia, 1907; member of the American Medical Association; past president of the Academy of Medicine of Lima and Allen County; on the staffs of Lima Memorial Hospital and St. Rita's Hospital, where he died September 4, aged 74, of cirrhosis of the liver.

**Max Berkovsky** ● New York; New York Homeopathic Medical College and Flower Hospital, New York, 1926; member of the American Academy of Dermatology and Syphilology; vice president of the Bronx Dermatological Society; served during World War II; affiliated with Bronx Hospital, Metropolitan Hospital and Mount Sinai Hospital; died in City Island, N. Y.; September 3, aged 48, of coronary thrombosis.

**Charles Armistead Blanton**, Richmond, Va.; Medical College of Virginia, Richmond, 1881; member of the American Medical Association; emeritus professor of diseases of children at his alma mater; on the staff of the Medical College of Virginia Hospital Division; in 1931 received the honorary degree of doctor of laws from Hampden-Sidney (Va.) College, where he was a trustee; died September 6, aged 90, of arteriosclerotic heart disease.

**William Ramsey Blue** ● Memphis, Tenn.; Vanderbilt University School of Medicine, Nashville, 1911; formerly on the faculty of the University of Tennessee College of Medicine; fellow of the American College of Physicians; died in the Methodist Hospital, September 8, aged 61, of pulmonary fibrosis.

**Jackson Murrell Bowling**, Forest Park, Ga.; Medical College of Virginia, Richmond, 1931; member of the American Medical Association; served during World War II; affiliated with the Crawford W. Long Memorial Hospital and Georgia Baptist Hospital, Atlanta, where he died September 6, aged 41, of intestinal obstruction and peritonitis following an appendectomy.

**William H. Brummit**, Chicago; Meharry Medical College, Nashville, Tenn., 1904; died September 7, aged 69, of acute coronary thrombosis.

**Isaac Erastus Burnett**, Mars Hill, N. C.; Tennessee Medical College, Knoxville, 1901; died September 1, aged 77, of diabetes mellitus.

**Hada M. Burkhart Carlson**, Rock Island, Ill.; Keokuk (Ia.) Medical College, 1898; supreme physician for the Royal Neighbors of America; died in the Moline (Ill.) Public Hospital September 10, aged 74, of coronary thrombosis and arteriosclerosis.

**Clarington William Caterson**, Montrose, Pa.; Jefferson Medical College of Philadelphia, 1891; died in the Binghamton City (N. Y.) Hospital October 2, aged 82, of diabetes mellitus, carcinoma of the prostate and cerebral thrombosis.

**William Henry Cleveland**, Tupelo, Miss.; Memphis (Tenn.) Hospital Medical College, 1913; member of the American Medical Association; past president and vice president of the Mississippi Public Health Association; served as health officer of Lee and Itawamba Counties; on the staff of the North Mississippi Community Hospital, where he died September 10, aged 61, of coronary thrombosis.

**Timothy Francis Cohane** ● New Haven, Conn.; Yale University School of Medicine, New Haven, 1897; staff physician at the New Haven County Jail; died in the Hospital of St. Raphael September 7, aged 74.

**Aaron Thomas Colson**, St. Petersburg, Fla.; Syracuse University College of Medicine, 1909; veteran of the Spanish-American War and World War I; died September 8, aged 75, of cardiovascular renal disease.

**George H. Cooper** ● Boise, Idaho; Central Medical College of St. Joseph, Mo., 1905; died September 18, aged 69, of bronchopneumonia.

**George Gilbert Crawford**, Strasburg, Va.; University of Virginia Department of Medicine, Charlottesville, 1901; member of the American Medical Association; past president of the Medical Society of Northern Virginia; for many years mayor; member of the Selective Service Draft Board of Shenandoah County during World War II and chairman at the time of his death September 6, aged 73.

**Antonio Maria Crispin** ● New York; Bellevue Hospital Medical College, New York, 1891; an Associate Fellow of the American Medical Association; formerly affiliated with the French, Columbus and Broad Street hospitals; died September 9, aged 78.

**Robey Atkins Crum**, Mount Vernon, Ill.; Chicago Medical School, 1933; member of the American Medical Association; past president of the Jefferson-Hamilton Counties Medical Society; died in Glen Hayes, W. Va., September 2, aged 50, of heart disease.

**Harry Percy Daws**, Pawling, N. Y.; University of the City of New York Medical Department, New York, 1886;

● Indicates Fellow of the American Medical Association.

health officer of the village of Pawling and police justice for many years; died September 25, aged 86, of chronic myocarditis.

**Arthur Winfield Day,** Brooklyn; Columbia University College of Physicians and Surgeons, New York, 1901; died September 6, aged 73.

**Philip Augustus Degnan,** Washington, D. C.; Georgetown University School of Medicine, Washington, 1934; member of the American Medical Association; died in the Tuberculosis Sanatorium, Glenn Dale, Md., September 30, aged 40, of cor pulmonale and pulmonary tuberculosis.

**Jean Paul du Plessis,** Chicago; Loyola University School of Medicine, Chicago, 1918; killed September 8, aged 57, when he fell from an eighteenth floor parapet.

**Henry A. Dyken,** Hutchinson, Kan.; University of Louisville (Ky.) Medical Department, 1888; served as president and secretary of the state board of medical registration and examination; in 1938 retired as chief medical officer of the Veterans Administration Facility in Wichita after holding the position seventeen years; at one time in charge of the Veterans Hospital in Kansas City, Mo.; died September 19, aged 80, of cerebral hemorrhage.

**Julius H. Faribault,** Brooklyn; University of Montreal Faculty of Medicine, Montreal, Canada, 1921; affiliated with the Coney Island Hospital; drowned September 12, aged 53, when he slipped and fell into the ocean.

**James Louis Fleming** ● Chicago; Rush Medical College, Chicago, 1903; formerly on the faculty of Loyola University School of Medicine; an Associate Fellow of the American Medical Association; specialist certified by the American Board of Obstetrics and Gynecology; fellow of the American College of Surgeons; on the staff of St. Anne's Hospital, where he died October 5, aged 77, of chronic myocarditis.

**Arthur Harvill Gray** ● Seattle; Vanderbilt University School of Medicine, Nashville, Tenn., 1906; member of the American Academy of Pediatrics; died in Yakima September 9, aged 68, of arteriosclerotic heart disease.

**Burt Francis Green** ● Hillsdale, Mich.; University of Michigan Department of Medicine and Surgery, Ann Arbor, 1900; fellow of the American College of Surgeons; served during World War I; formerly councilor of the Second District of the Michigan State Medical Society; a trustee of the Hillsdale College and vice president of the First National Bank; affiliated with the Hillsdale Community Health Center, where he died September 26, aged 79, of heart disease.

**Louis Guberman,** Cincinnati; Universität Bern Medizinische Fakultät, Switzerland, 1935; member of the American Medical Association; died September 12, aged 39, of mitral stenosis.

**Alfred Hand** ● Philadelphia; University of Pennsylvania Department of Medicine, Philadelphia, 1892; professor emeritus of pediatrics at the Medico-Chirurgical College, Graduate School of Medicine, University of Pennsylvania; consulting physician to the Children's Hospital, Methodist Hospital and the Children's Hospital of the Mary J. Drexel Home; died in Montrose, Pa., September 1, aged 81, of myocardial failure.

**Glenn Harold Heilman** ● Tarentum, Pa.; University of Pittsburgh School of Medicine, 1923; fellow of the American College of Surgeons; served during World War I; on the staff of the Allegheny Valley Hospital, where he died September 7, aged 53.

**George Gottlieb Helbling,** Denver; College of Physicians and Surgeons, Boston, 1928; died August 25, aged 66.

**Solomon Hermann,** Brooklyn; Friedrich-Wilhelms-Universität Medizinische Fakultät, Berlin, Germany, 1898; served on the staff of the Maimonides Hospital; died September 6, aged 77, of coronary thrombosis.

**Morris L. Hershman,** Chicago; Chicago College of Medicine and Surgery, 1917; member of the American Medical Association; affiliated with the Garfield Park Community Hospital, where he died September 8, aged 60, of coronary thrombosis.

**Norman William Heysett** ● Fort Wayne, Ind.; Indiana University School of Medicine, Indianapolis, 1929; member of the American College of Chest Physicians and American Trudeau Society; on the staff of the Irene Byron Sanatorium, where he died in September, aged 45, of pulmonary tuberculosis and hypertension.

**Urius Himmelstein** ● New York; Cornell University Medical College, New York, 1910; specialist certified by the American Board of Pediatrics; affiliated with the Mount Sinai Hospital, Bronx Maternity Hospital and Woman's Hospital; died in Lowell, Mass., September 2, aged 63, of hypertensive cardiovascular disease.

**Mary Holmes** ● Washington, D. C.; National University Medical Department, Washington, 1900; Woman's Medical College of Pennsylvania, Philadelphia, 1901; died September 7, aged 75, of coronary thrombosis.

**William Henry Horton,** Pineville, Mo.; Barnes Medical College, St. Louis, 1897; died August 17, aged 74, of myocarditis and lymphatic leukemia.

**Henry Warner Johnson,** Cambridge, N. Y.; Albany Medical College, 1891; died September 6, aged 82, of cerebral hemorrhage.

**Samuel Harris Johnson** ● Pittsburgh; University of Pittsburgh School of Medicine, 1906; member of the Pittsburgh Academy of Medicine; affiliated with Western Pennsylvania Hospital; died in Atlantic City, N. J., September 8, aged 67 of coronary thrombosis.

**Thomas Evans Jones** ● Cleveland; Western Reserve University School of Medicine, Cleveland, 1916; specialist certified by the American Board of Surgery; member of the American Association of Obstetricians, Gynecologists and Abdominal Surgeons, American Surgical Association and Eastern Surgical Association; a fellow, since 1941 governor and in 1947-1948 first vice president of the American College of Surgeons; served during World War I; chief of surgical staff, Cleveland Clinic Foundation; died September 29, aged 57, of coronary thrombosis.

**William Shields Jones,** Redmon, Ill.; Kentucky School of Medicine, Louisville, 1893; member of the American Medical Association; served as county coroner; for many years a minister of the Baptist Church; affiliated with the Paris (Ill.) Hospital; died in Paris October 10, aged 86.

**Steven G. Julay,** New York; Magyar Királyi Ferencz József Tudományegyetem Orvostudomanyi Kara, Szeged, Hungary, 1924; member of the American Medical Association and the American Psychiatric Association; affiliated with Mount Sinai Hospital; died in Rowayton, Conn., September 5, aged 52, of acute coronary thrombosis.

**Edward Adolph Jurgelwicz,** New Orleans; Medical Department of Tulane University of Louisiana, New Orleans, 1903; member of the American Medical Association; affiliated with the Mercy Hospital-Soniat Memorial; died September 1, aged 77, of coronary thrombosis.

**Verner Kennedy,** Utica, N. Y.; New York Homeopathic Medical College and Flower Hospital, New York, 1913; served overseas during World War I; on the staff of the Utica Memorial Hospital; member of the Association of Military Surgeons of the United States; died September 27, aged 59, of coronary thrombosis.

**Alfred Croegrove Kingsley** ● Phoenix, Ariz.; University of Buffalo School of Medicine, 1901; member of the American Psychiatric Association; on the visiting staff of St. Joseph's and Good Samaritan hospitals; died September 5, aged 72, of metastatic carcinoma of the liver.

**Charles J. Krehbiel,** Dayton, Ohio; Pulte Medical College, Homeopathic, Cincinnati, 1897; also a druggist; died September 27, aged 78.

**Francis Arthur La Brock** ● Eau Claire, Wis.; the Hahnemann Medical College and Hospital, Chicago, 1908; on the staffs of the Luther and Sacred Heart hospitals; died September 5, aged 73, of coronary thrombosis.

**James Davis Lewis** ● Scranton, Pa.; University of Michigan Department of Medicine and Surgery, Ann Arbor, 1909; past president and secretary of the Lackawanna County Medical Society; an officer overseas during World War I; served as health director of Lackawanna County and health officer of the city of Scranton; in 1945 appointed a member of the state board of health; died in the Scranton State Hospital September 2, aged 69, of coronary sclerosis.

**Frank Pierce Malone,** South Portland, Me.; Medical School of Maine, Portland, 1898; died September 5, aged 76, of coronary sclerosis and diabetes mellitus.

**Louis Joseph Rudiger,** Hobe Sound, Fla.; Tufts College Medical School, Boston, 1925; member of the Massachusetts Medical Society and the American Medical Association; died in the Martin County Hospital, Stuart, August 27, aged 56, of coronary occlusion, following an automobile accident.

**John Francis Rudolph,** Warren, Ohio; Western Reserve University Medical Department, Cleveland, 1903; past president of the Trumbull County Medical Society; served during World War I; for many years affiliated with the City Hospital, now known as the Trumbull Memorial Hospital, and St

Joseph's Riverside Hospital; died in the Crile Hospital, Cleveland August 22, aged 77, of coronary thrombosis.

**Robert L. St. Clair,** Kansas City, Mo.; Missouri Medical College, St. Louis, 1898; member of the American Medical Association; on the staff of St. Joseph's Hospital; died September 2, aged 74, of bronchopneumonia and cerebral thrombosis.

**William Jackson Sayles** ● Miami, Okla.; State University of Iowa College of Medicine, Iowa City, 1931; served during World War II; died in St. John's Hospital, Tulsa, August 26, aged 45, of poliomyelitis.

**Charles Mathias Schoen** ● Milwaukee; College of Physicians and Surgeons of Chicago, School of Medicine of the University of Illinois, 1905; died August 17, aged 78, of miliary tuberculosis.

**Edward Elias Shibel,** North Adams, Mass.; Georgetown University School of Medicine, Washington, D. C., 1934; member of the American Medical Association; formerly city physician; affiliated with the St. Luke's Hospital in Pittsfield and North Adams Hospital; died August 15, aged 45, of coronary thrombosis.

**William S. Shouse,** Kingston, Mo.; St. Louis College of Physicians and Surgeons, 1898; died in Liberty August 23, aged 81, of arteriosclerosis.

**David Hermann Shulman,** Boston; Medical College of Virginia, Richmond, 1912; died August 17, aged 61, of coronary disease.

**Nathaniel Eldridge Silsley** ● Scottdale, Pa.; University of Pennsylvania School of Medicine, Philadelphia, 1894; secretary of the board of health of Scottdale; died August 2, aged 80, of cerebral hemorrhage.

**Baxter Allen Smith** ● Crosby, Minn.; Queen's University Faculty of Medicine, Kingston, Ontario, Canada, 1905; served as vice president of the Minnesota State Medical Association; died August 17, aged 73, of bronchopneumonia and cerebral vascular accident.

**Dudley Reeves Smith** ● St. Louis; Washington University School of Medicine, St. Louis, 1923; assistant professor of clinical obstetrics and gynecology at his alma mater; specialist certified by the American Board of Obstetrics and Gynecology; member of the American Association of Obstetricians, Gynecologists and Abdominal Surgeons; served during World War II; affiliated with Barnes Hospital, St. Louis Maternity Hospital, De Paul Hospital, Deaconess Hospital and St. Luke's Hospital, where he died August 16, aged 51, of pneumonia.

**Virginia Tenney Smith,** Long Beach, Calif.; Boston University School of Medicine, 1888; died August 6, aged 89, of thrombotic encephalomalacia and arteriosclerosis.

**Joseph Arthur Murphy Smurl,** Haddon Heights, N. J.; Baltimore Medical College, 1896; died in the Cooper Hospital, Camden, August 23, aged 76, of Richter's hernia and coronary insufficiency.

**Theodore Sokow** ● Kenosha, Wis.; Albert-Ludwig-Universität Medizinische Fakultät, Freiburg, Baden, Germany, 1914; specialist certified by the American Board of Radiology; member of the Radiological Society of North America and the American College of Radiology; on the staffs of the Kenosha and St. Catherine's hospitals; died August 1, aged 59, of cerebral hemorrhage and coronary occlusion.

**Earl A. Soule,** East Moline, Ill.; the Hahnemann Medical College and Hospital, Chicago, 1901; member of the American Medical Association; affiliated with the Moline Public Hospital and the Lutheran Hospital in Moline, where he died August 9, aged 72, of cerebral hemorrhage and arteriosclerosis.

**Joseph C. Stahlman,** Vandergrift, Pa.; Western Reserve University Medical Department, Cleveland, 1887; examining physician for the local draft board during World War I and II; member of the American Medical Association; died August 14, aged 90, of arteriosclerotic heart disease.

**John Henry Stood,** Dalton, Ga.; Georgia College of Eclectic Medicine and Surgery, Atlanta, 1902; member of the American Medical Association; on the staff of the Hamilton Memorial Hospital; died August 18, aged 73, of carcinoma of the larynx.

**Andy Bryan Stephens** ● Seminole, Okla.; University of Oklahoma School of Medicine, Oklahoma City, 1928; died in the Valley View Hospital, Ada, August 15, aged 44, of cirrhosis of the liver and myocardial infarction.

**John Le Roy Stevens,** Colorado Springs, Colo.; Denver and Gross College of Medicine, 1908; member of the American Medical Association; died August 25, aged 78, of myocardial degeneration

**Evan Carson Stone,** Minot, N. D.; Minneapolis College of Physicians and Surgeons, medical department of Hamline University, 1905; served in the state legislature; formerly coroner of Ward and McHenry counties; died in St. Joseph's Hospital August 4, aged 74, of malignancy of the kidney.

**Theodore Le Roy Story** ● Southbridge, Mass.; Tufts College Medical School, Boston, 1917; member of the American Association of Industrial Physicians and Surgeons; for many years affiliated with the American Optical Company; died in St. Vincent's Hospital August 9, aged 61, of adenocarcinoma of the prostate with metastases.

**Sterling Price Strother,** Oklahoma City; Beaumont Hospital Medical College, St. Louis, 1901; served on the staff of Polyclinic Hospital; died in St. Anthony Hospital August 2, aged 82, of arteriosclerotic heart disease.

**Boris Ury** ● Beverly Hills, Calif.; University of Illinois College of Medicine, Chicago, 1940; member of the Illinois State Medical Society; formerly on the faculty of his alma mater; died in Santa Monica August 26, aged 45, of injuries received when he fell from the sixth floor.

**Earl R. Van Amburgh,** Pine Bush, N. Y.; New York Homeopathic Medical College and Flower Hospital, New York, 1915; member of the American Medical Association; past president of the Orange County Medical Society; school physician; for many years health officer; on the staff of St. Luke's Hospital in Newburgh; died August 7, aged 58, of carcinoma.

**Frank E. Wagner,** Baltimore; College of Physicians and Surgeons, Baltimore, 1894; veteran of the Spanish-American War; died in the U. S. Marine Hospital July 24, aged 78, of carcinoma of the prostate with metastasis to the liver and arteriosclerosis.

**Julia Washburn,** Lexington, Ky.; Cleveland Medical College, Homeopathic, 1891; died August 14, aged 88.

**Talmage Bryan Weatherly,** Richmond, Va.; University College of Medicine, Richmond, 1912; member of the American Medical Association; on the staff of the Retreat for the Sick; died September 4, aged 61, of uremia and renal tuberculosis.

**George T. Webb** ● Brooklyn; Schlesische-Friedrich-Wilhelms-Universität Medizinische Fakultät, Breslau, Germany, 1911; fellow of the American College of Surgeons; on the staff of the Coney Island Hospital; died August 20, aged 61, of coronary thrombosis.

**Stephen Albro Welch** ● Providence, R. I.; Harvard Medical School, Boston, 1884; served as president of the Rhode Island Medical Society; on the staff of the Rhode Island Hospital; died September 7, aged 91, of carcinoma.

**Jonathan Godfrey Wells** ● New York; Columbia University College of Physicians and Surgeons, New York, 1900; formerly on the faculty of the New York Post-Graduate Medical School and Hospital, Columbia University; served on the Selective Service Board during World War I; senior examining physician for the Mutual Life Insurance Company for many years; three times elected president of the City Hospital Alumni Association; died September 2, aged 72, of coronary disease.

**Edwin Jay Wilkinson,** Toledo, Ohio; Toledo Medical College, 1902; on the staff of St. Vincent's Hospital, where he died August 29, aged 70, of coronary thrombosis.

**Robert Crawford Woodard** ● Miami, Fla.; University of Georgia Medical Department, Augusta, 1899; member of the American College of Hospital Administrators; served in the Georgia state legislature; formerly superintendent of the James M. Jackson Memorial Hospital, where he died August 31, aged 81, of coronary sclerosis and carcinoma of the bladder.

**Norman Lee Woodry** ● Detroit; Detroit College of Medicine, 1913; specialist certified by the American Board of Otolaryngology; fellow of the American Academy of Ophthalmology and Otolaryngology; affiliated with Harper, Mount Carmel Mercy and Florence Crittenden hospitals; died August 6, aged 59, of coronary thrombosis.

**Cyrus Edward Yeagle,** Toledo, Ohio; Toledo Medical College, 1903; died September 4, aged 77, of melanoma of the face.

**John Glenn Young,** Pontiac, Ill.; Barnes Medical College, St. Louis, 1906; member of the American Medical Association; served during World War I; affiliated with Mennonite Hospital in Bloomington and St. James Hospital; formerly physician for the state reformatory; died September 5, aged 70, of myocarditis and arteriosclerosis.

# Foreign Letters

## PARIS

*(From Our Regular Correspondent)*

Sept. 30, 1949.

### International Antituberculosis Union

A meeting of the Council of the International Antituberculosis Union was held at the secretariat of the union, 66 Boulevard Saint-Michel, July 11-13, 1949. Delegates of 24 nations were present; Dr. J. B. MacDougall represented the World Health Organization. The administrative sessions were devoted chiefly to the revision of the union's constitution; a modified text of the by-laws will be submitted to the General Assembly meeting in 1950 in preparation for the eleventh conference of the union, which will be held in Copenhagen Sept. 5-10, 1950. The secretary general, Prof. Etienne Bernard, announced the admission of Haiti, Iran and Turkey, bringing to 45 the number of countries belonging to the union. Invitations to summon a coming international conference in their respective countries were addressed to the union by the representatives of the United States, Brazil and India. The following subjects were selected for the agenda of the conference: tubercle bacilli and chemotherapeutic agents, their sensitivity, resistance and dependence (first report by Dr. Esmond Long); indications for collapse therapy and antibiotics in the treatment of pulmonary tuberculosis (opening report by Messrs. E. Rist and Etienne Bernard, secretary general of the International Antituberculosis Union), and emergency order of the measures to be adopted in countries "where the tuberculosis campaign has just started" (opening report by M. Arlindo de Assis.

At the first scientific session of the Council Dr. Esmond Long read a paper on "Resistance of Mycobacterium Tuberculosis to Streptomycin." The second scientific session was devoted to the discussion of surgical exeresis in the treatment of pulmonary tuberculosis. Reports were read by Prof. Price Thomas, London, and by professors Santy and Bérard, Lyons. Prof. Price Thomas summarized his conclusions: "Resection of the lung for pulmonary tuberculosis offers the best prospect of cure in the type of case which will not react favorably to any of the standard methods of relaxation therapy. Patients with disease which can satisfactorily be treated by thoracoplasty should continue to be so treated until it is established that resection offers a better prospect at a smaller risk. The matter of deformity should not enter too seriously into the discussion." Messrs. de Winter, Odelberg, Maurer and Lebrigant took part in the ensuing discussion.

### Treatment of Psoriasis with Placental Extracts

Prof. J. Gate, Drs. R. Vachon, R. Moindrot and J. Cotte (Lyons) tried treating psoriasis with aqueous extracts of placenta, gathered immediately after delivery and stored in a refrigerator for about eight days. The treatment consists of daily intramuscular injections given in thirty to forty day courses. At a meeting of the French Society of Dermatology and Syphilography, they reported their first results in 28 cases; in 3 cases all signs were eliminated without any other external treatment. In one of these 3 cases the disease had been resistant to all classic treatment for eight years. Of the 2 remaining patients, who were experiencing their first outbreak, one had not responded to arsenical therapy. The patients had been free from psoriasis four to six months. Considerable improvement had been noted in 3 cases of long-standing disease (80 to 90 per cent). Eleven patients showed some improvement. The treatment is well tolerated except that (1) in 1 case a transient pruriginous, eruptive reaction, resembling herpes gestationis, was noted, (2) several patients experienced general fatigue, sleepiness and sometimes an increase of appetite, which may be attributed to the hypoglycemia sometimes found in tissular therapy, and (3) 1 woman experienced a temporary cessation of her menses. The results may be better with improvement of the method.

### Placental Implantations in Ophthalmology

Belz, at a recent meeting of the Lyons Society of Ophthalmology, reported a case of bilateral neuritis, of two years' duration, with vision of 1/20, enormous scotomas, decoloration of the temporal half-papillae and disorders of retinal adaptation. Alcoholism and tabacosis are responsible for this neuritis. The patient had failed to respond to all other types of treatment. After stopping the use of tobacco and alcohol, Belz performed a subcutaneous implantation of a fragment of placenta and, fourteen days later, noted an appreciable result: improved vision of the right eye to 8/10 and of the left eye to 7/10. A second implantation of placenta was performed three weeks later, resulting in 8/10 vision in both eyes. After a series of injections of placental extracts and the administration of vitamin B, there was greater improvement and the patient was able to resume his work as accountant. Mrs. Matavulj recently reported to the Paris Society of Ophthalmology a case of uveal tuberculosis rapidly improved, in three days, after a subcutaneous implantation of placenta. Paufique and Hugonnier reported to the Lyons Society of Ophthalmology a case of detachment of the retina; operation had been unsuccessful, but there had been spectacular improvement (rapid resetting) after a subcutaneous placental implantation followed by slight diathermocoagulation. Although all previous therapies, including sympathicolytic measures, had failed, Mayer and Kanitakis succeeded in improving arteritis of the inferior limbs with reappearance of the oscillations (noted with the Pachon sphygmograph) and in curing obstinate painful ulcerations by means of two successive placental grafts (reported to the French Society of Dermatology and Syphilography on July 7, 1949).

### 1948 Cancer Mortality Rate

Data recently published by the National Institute of Statistics and Economic Studies give the following figures on deaths due to cancer for the year 1948: There were 72,965 deaths, 35,480 male and 37,485 female. Of 100 deaths from a known cause, 16 per cent were attributable to cancer. In 1946, 13.3 per cent of all deaths were due to cancer, and in 1947, 13.8 per cent.

## ITALY

*(From Our Regular Correspondent)*

FLORENCE, Sept. 30, 1949.

### In Defense of Public Health

Prof. Giuseppe Alberti (senator) delivered an important speech in the Senate in defense of public health; he called attention to the importance of the office of the High Commissioner for Hygiene and Public Health and particularly of the High Institute of Health. The office of public health is well administered if general benefit results in the field of social medicine. According to the speaker, differentiation between general and occupational diseases would result in oversimplification of public health administration. He did not believe that the office of the High Commissioner could be abolished but felt that a Ministry of Public Health should be established to help care for all the needs in the social health field, prophylactic, supportive and therapeutic. In a radical reorganization of public health departments, the problems dealing with the protection of mothers and infants should be given particular consideration. With

respect to malignant disease, the speaker emphasized that the number of patients with malignant tumors is increasing, while the machinery for combating malignant disease is still insufficient. One should therefore encourage those institutions which do scientific research in this field and consider the important social aspects with respect to work and occupations which may produce malignant disease.

### Medical Society Meeting

At the Neapolitan Society of Medicine, Cacciapuoti and Simonelli discussed the intravenous use of salicylates in the treatment of sequelae of encephalitis.

The use of salicylates in lethargic encephalitis and its sequelae is not new, and the purpose is to neutralize the alkalosis, the vagotonia and the hyperdefensive condition of the pyramidal tonus.

The insignificant results obtained with the intravenous use of 10 per cent sodium salicylate for pain from atrophic arthritis induced the employment of doses of 20 and 30 cc. at gradually increased intervals. The results were surprising: The voice returned, the spoken words could be understood and the extremities were extended progressively until an upright position could be assumed and the patient could walk by himself. Only the tremor was not much attenuated.

A phenomenon worthy of consideration is the nearly complete absence of the diaphoretic reaction to the use of sodium salicylate intravenously even when large doses are given.

Cacciapuoti and Santanelli reported 2 cases of cerebral malaria with rapid recovery resulting from intramuscular administration of acetylcholine followed by intravenous administration of quinine solution in twice the usual concentration. At the International Congress of Neurologists in London in 1935 a speaker reported a case of hemiplegia of malarial origin which resisted all chemotherapy, but subsided rapidly after the intramuscular administration of acetylcholine followed by intravenous administration of quinine in solution of twice the usual concentration.

### Honors Conferred on Professor Giordano

A ceremony took place in the medical library of the School of Saint Mark in Venice to celebrate the eighty-fifth birthday of Prof. David Giordano. The famous surgeon and journalist is at present chief emeritus of the Civilian Hospital of Venice. His admirable contributions as a scientist, historian of medicine and model citizen were praised.

## DENMARK

*(From Our Regular Correspondent)*

COPENHAGEN, Oct. 7, 1949.

### Should the General Practitioner Vaccinate with BCG?

A letter from a general practitioner in a recent number of the journal of the Danish Medical Association suggests that tuberculosis dispensaries and the specialists in charge of them are trying to control BCG vaccination to the exclusion of general practitioners. Why, the correspondent asks, should children be sent long distances at the expense of their parents to tuberculosis dispensaries where they may have to come into contact with persons with tuberculosis and where they will be vaccinated not by a doctor but by a nurse? In reply it was pointed out that such vaccination requires considerable skill and that practiced vaccinators have the fewest complications. Furthermore, the tuberculosis dispensaries can undertake a radiologic examination before vaccination and can carry out and check the results of tuberculin testing with a background of considerable experience. Besides, most general practitioners do not have a stock of fresh BCG. A compromise has been suggested: In the future BCG vaccination should be largely in the hands of traveling teams of vaccinators, as is already the case in many parts of Europe.

Another question still being debated is the extension of BCG vaccination to the first year of life. More than a million Danes have already underone BCG vaccination, but hitherto the BCG vaccination of the newborn and of infants has to some extent been limited to tuberculous environments. Now it is being urged that even in nontuberculous environments it is safest to vaccinate with BCG at the earliest date possible. Dr. Povl Hertz recently published a study of 537 infants whose ages ranged up to 1 year, who lived in an environment which in practically every case was or had been tuberculous, and who were vaccinated with BCG. Their further development was normal, and none of the 6 deaths among them was due to tuberculosis. It has been argued that the newborn are poor antibody producers, but Hertz found that only 2 of the 64 newborn infants he vaccinated had to be vaccinated again to become tuberculin positive. It is, however, generally agreed that the vaccination of infants presents greater difficulties than that of older children.

### Centralization of Narcotic Poisoning Cases

As of Oct. 1, 1949, every Copenhagen patient with narcotic poisoning requiring hospital treatment is to be sent to the psychiatric department of the Bispebjerg Hospital, instead of to the nearest general hospital. All ambulance and emergency medical services and all doctors in the city have been given instructions to this effect. These patients are kept in the psychiatric department as long as they are unconscious. When they recover consciousness, they are transferred to the general psychiatric part of this department if psychiatric after-treatment is desirable.

This arrangement reflects the change which has taken place in the treatment of poisoning by narcotics in general and the barbiturates in particular. It is not an exaggeration to say that only a short time ago any intern in any general hospital was considered fully qualified and fully equipped for meeting such emergencies. Now it is realized that the ultimate fate of the patient, life or death, often depends on the mastery of the modern technic of the treatment in such cases and on the equipment available—equipment which is so costly that some hospitals cannot afford it. In March 1949, Dr. Aage Kirkegaard published an account of the modern treatment of acute poisoning with barbiturates in the journal of the Danish Medical Association (*Ugeskrift for Laeger*). He pointed out that among recent advances are the introduction of analeptics of the "metrazol" group, the useful sulfonamide drugs for the prevention of pneumonia, aspiration and irrigation of the stomach with charcoal and magnesium sulfate, blood transfusions and the timely prevention of secondary circulation shock. The respirations, pulse rate, temperature, blood pressure and hemoglobin percentage should be observed at four hour intervals and treatment instituted as needed. The chemical composition of the plasma should be controlled daily, and, if acute edema of the lungs threatens, appropriate treatment should be given promptly. All these measures and others require costly apparatus and skilled personnel.

### August Krogh

When the physiologist and Nobel prize winner, August Krogh, died in Copenhagen this autumn, his international reputation gave rise to many detailed obituary notices throughout the world. However, an example of the importance of the work of this great scientist lies in the part now taken by Denmark in the natural sciences, particularly physiology. Krogh was born in 1874, studied zoology and graduated in 1899 from the University of Copenhagen. Before his graduation he worked as a student in Christian Bohr's physiologic laboratory. A few

years later he attained the rank of professor. In 1908 he and his wife spent some time in Greenland studying the diet and metabolism of Eskimos, living almost exclusively on fish, fat and seal meat. By 1910 he had concluded that the passage of gases between the blood and the air in the lungs is a process of simple gas diffusion. Subsequently, he did much work on the regulation of breathing and on the physiology of muscular exercise. Some time later his attention was focused on the capillary circulation and on the oxygen consumption of muscles during severe exercise. A full account of this and related research was given in his Silliman lectures delivered at Yale University.

The award of a Nobel prize in 1920 introduced Krogh to thousands who had not hitherto heard his name. In his later years he did much research on the osmotic regulation in aquatic animals. He retired from his university chair in 1945, but he continued working till he died. The gifts which made Krogh great were a capacity for critical reasoning, a vivid but disciplined imagination and a technical dexterity which enabled him to devise effective but simple apparatus. In spite of his natural shyness, he gained a following, a school of enthusiasts who are now working in the Krogh tradition.

## Correspondence

### DIABETES AND ITS TREATMENT

*To the Editor:*—I wish to call your attention to the content of the book notice published in THE JOURNAL of August 27 on my book "Diabetes and Its Treatment." The review of the medical matter begins by saying that diabetic acidosis and coma and pregnancy are discussed thoroughly and in the following sentence says that the treatment of acidosis is given in a decidedly empiric fashion. This is a contradiction in itself and a misstatement of fact. Chapter VIII, pages 165 to 188, is devoted to the treatment of acidosis and coma, beginning with the origin of our ideas concerning coma, and a step by step description of the evolution of knowledge concerning its treatment. Credit is given to the workers who have laid the foundation for present day treatment. This has not been done as completely or as carefully in other books on the treatment of diabetes. The treatment as planned offers a complete guide for the handling of these cases and the treatment as outlined is not empiric. Each step is guided by laboratory controls and my mortality rate of 2.2 per cent (p. 165) shows the results obtained by this method of treatment.

The reviewer comments on "the thorough study of nutrition and growth in childhood" and then says that the chapter on the use of insulin in childhood seems inadequate in view of its importance. In principle, insulin in the child acts as it does in the adult, and, if one were to attempt detailed description of insulin behavior in individual children, volumes could be written that would add nothing toward better understanding or better treatment. In a book for the practitioner of medicine, complex details lead only to confusion of the doctor and failure in treatment. And, what have all the trick formulas and insulin combinations, about which we read so much, yielded to patient and doctor? The main discussion of insulin and its use is covered by chapters XV and XVI.

Concerning the comment on the inadequate discussion of the biochemistry and physiology of diabetes, this subject was included in the original draft of the book but was eliminated because this is a book for the adult practitioner of medicine who knows where to find such information at its original sources.

The reviewer said that some of the premises, pertaining to the occurrence of diabetes in China and elsewhere, are not sound. Is it finally settled, that the incidence of diabetes in Arizona is representative of diabetes everywhere else? This is a thin argument in the face of all that is known of the history of diabetes, which is more prevalent in certain areas and among certain peoples whose way of life and geographic location differ. I accept the experiences of pathologists and clinicians who have studied diabetes in foreign lands and have noted this striking difference.

The next obverse comment is "The discussion of endocrine relationships in diabetes is not well organized and is unconvincing." I wish the reviewer had stated who does understand the relationship between the endocrines and diabetes. There is plenty of speculation, but who has the facts? It is my privilege to sit in with seventeen research workers and world authorities in metabolism and endocrinology, and diabetes is a major problem with us. If any of these men has unquestioned evidence on the true relationship, it has not been revealed.

The reviewer's statement that "the author's instructions that insulin should be omitted or reduced in illness and prior to operation seems dangerous" is a misrepresentation of fact. I have cited cases of death following the omission of insulin during infectious disease (p. 303). I have stated clearly that the patient's diet should be reduced and the previous full insulin dosage must be continued to maintain a normal blood sugar level (p. 303).

I have introduced page size figures and graphs (pp. 100-101) showing the increased need of insulin during infections and fevers (p. 303), and yet the reviewer implies that I ignore hyperglycemia in diabetes. I have nowhere advised tolerance of higher than normal blood sugar levels (120 mg.) except in the aged and in arteriosclerotic persons in whom insulin reactions develop when high levels of blood sugar occur. I have seen coronary occlusions in such patients after too much insulin, which does not indicate that a high blood sugar in diabetes is to be advocated.

On the day of operation, when the patient is without food, dextrose with insulin is given intravenously—at the end of the operation and throughout the rest of the day (pp. 158-164). In this way postoperative insulin shock is prevented.

The reviewer takes exception to the arbitrary prescription of 1 unit of insulin for 2 Gm. of carbohydrate. I refer the reviewer to Joslin's book (Joslin, E.: Diabetes, ed. 8, Philadelphia, Lea & Febiger, 1948, pp. 375-376).

The reviewer states that the value of insulin with intermediate action is not discussed. Seventy-two per cent of our patients are treated with mixtures of protamine zinc and clear insulin (pp. 288-294). If the reviewer had in mind such insulin as NP 50, this preparation is still in its clinical observation stage, is not available to the practitioner, and it may even be supplanted by another preparation before long. In our hands, NP 50 insulin has not accomplished more than the insulin mixtures we have been using. Globin and other insulins are compared and discussed on pages 290 to 293.

This review refers to my book as a useful encyclopedia of empiric information. What other species of information is required to relay simple and realistic facts to the practitioner of medicine? The criticisms in this review cannot be substantiated by the printed words in the book.

It is a reviewer's privilege to state his impressions, but he is morally obligated to be correct in his quotations and interpretation of the content in that book. This review has failed completely to meet such requirements.

JOSEPH H. BARACH, M.D., Pittsburgh.

# Council on Medical Education and Hospitals

## APPOINT ASSOCIATE DIRECTOR OF SURVEY OF MEDICAL EDUCATION

The Committee for the Survey of Medical Education, sponsored jointly by the Council on Medical Education and Hospitals and the Association of American Medical Colleges, has announced the appointment of Dr. Robert C. Berson to the full time staff of the survey. Dr. Berson will be associate director of the survey and will assist Dr. John E. Deitrick, the director in the survey of medical schools that was initiated this fall. Dr. Berson is assistant dean and assistant professor of medicine at the University of Illinois College of Medicine and assistant medical director, Research and Educational Hospitals. He has been granted a leave of absence for the duration of the survey. Dr. Berson is a graduate of Vanderbilt University School of Medicine and a specialist certified by the American Board of Internal Medicine.

## HOSPITAL FACILITIES FOR THE TREATMENT OF POLIOMYELITIS

### Report of Survey by Council on Medical Education and Hospitals

In July 1947 the National Foundation for Infantile Paralysis requested the assistance of the American Medical Association in obtaining information on the availability of hospital facilities for the treatment of poliomyelitis. In accordance with this request the following questions submitted by the National Foundation were included in the annual survey of hospitals conducted by the Council on Medical Education and Hospitals at the end of 1947:

1. Do you admit infantile paralysis patients?
2. If so, in what year did you start admitting them?

Of the total of 6,276 hospitals included in the Council's survey, 1,243 reported that infantile paralysis patients were accepted for treatment. These include 1,039 general hospitals, 63 orthopedic hospitals, 34 isolation units, 33 hospital departments of institutions, 26 psychiatric divisions and 48 other hospitals, as illustrated in table 1.

TABLE 1.—*Hospitals Admitting Poliomyelitis Patients*

(Classified by Type of Service)

| Type of Service | Number of Hospitals |
|---|---|
| General | 1,039 |
| Orthopedic | 63 |
| Isolation | 34 |
| Institutional | 33 |
| Psychiatric | 26 |
| Children | 19 |
| Tuberculosis | 11 |
| Convalescent | 11 |
| Chronic | 5 |
| Industrial | 2 |
| Total | 1,243 |

On the basis of control, 181 are listed as federal hospitals, 294 under state, city or county control, 688 as church or other nonprofit associations and 80 as proprietary hospitals. A further subdivision of these groups is shown in table 2.

Hospital facilities for the treatment of poliomyelitis are available in all states and the District of Columbia, as shown in table 3. The highest numbers were reported in New York, Texas, Illinois, Pennsylvania and California, where the hospitals admitting infantile paralysis patients totaled 146, 76, 70, 62 and

TABLE 2.—*Hospitals Admitting Poliomyelitis Patients*

(Classified by Control)

| Control | Number of Hospitals | Control | Number of Hospitals |
|---|---|---|---|
| U. S. Army | 54 | City | 118 |
| U. S. Navy | 27 | City-County | 21 |
| U. S. P. H. Service | 17 | Church | 256 |
| Veterans Administration | 61 | Nonprofit Association | 432 |
| Indian Affairs | 18 | Individual | 35 |
| Other federal | 4 | Partnership | 14 |
| State | 57 | Corporation | 31 |
| County | 93 | | |
| Total | | | 1,243 |

TABLE 3.—*Hospitals Admitting Poliomyelitis Patients*

(Classified by States)

| State | Total Hospitals | Hospitals Admitting Poliomyelitis Patients |
|---|---|---|
| Alabama | 103 | 22 |
| Arizona | 56 | 16 |
| Arkansas | 66 | 11 |
| California | 378 | 59 |
| Colorado | 96 | 16 |
| Connecticut | 78 | 13 |
| Delaware | 16 | 4 |
| District of Columbia | 29 | 5 |
| Florida | 130 | 32 |
| Georgia | 122 | 22 |
| Idaho | 41 | 10 |
| Illinois | 377 | 70 |
| Indiana | 136 | 25 |
| Iowa | 182 | 25 |
| Kansas | 120 | 26 |
| Kentucky | 99 | 17 |
| Louisiana | 87 | 9 |
| Maine | 61 | 12 |
| Maryland | 82 | 11 |
| Massachusetts | 225 | 46 |
| Michigan | 255 | 46 |
| Minnesota | 206 | 36 |
| Mississippi | 92 | 6 |
| Missouri | 143 | 32 |
| Montana | 53 | 15 |
| Nebraska | 99 | 19 |
| Nevada | 14 | 4 |
| New Hampshire | 39 | 11 |
| New Jersey | 136 | 28 |
| New Mexico | 48 | 8 |
| New York | 323 | 146 |
| North Carolina | 164 | 20 |
| North Dakota | 46 | 22 |
| Ohio | 238 | 38 |
| Oklahoma | 137 | 19 |
| Oregon | 74 | 18 |
| Pennsylvania | 345 | 62 |
| Rhode Island | 23 | 4 |
| South Carolina | 67 | 15 |
| South Dakota | 52 | 11 |
| Tennessee | 125 | 18 |
| Texas | 397 | 76 |
| Utah | 33 | 5 |
| Vermont | 30 | 13 |
| Virginia | 125 | 17 |
| Washington | 117 | 33 |
| West Virginia | 83 | 14 |
| Wisconsin | 219 | 46 |
| Wyoming | 39 | 11 |
| Total | 6,276 | 1,243 |

59 respectively. Further, it may be shown that the number of participating hospitals varied from 31 to 46 in nine states, from 10 to 28 in twenty-seven states and from 4 to 9 in seven states and the District of Columbia. For comparative purposes the number of hospitals in each state is shown in table 3 as well as the number of institutions admitting poliomyelitis patients.

A total of 893 hospitals indicated the year in which infantile paralysis patients were first accepted for hospital treatment. Of this number 275 had established facilities for poliomyelitis prior to 1930, 62 hospitals received their first infantile paralysis patient in 1930-1934, 70 in 1935-1939, 217 in 1940-1944 and 269 in the period 1945-1947. This increase in recent years in the utilization of hospital facilities for poliomyelitis may also be noted in tables 4 and 5, where the aforementioned data are classified further in accordance with the type of hospital service and control.

TABLE 4.—*Hospitals Admitting Poliomyelitis Patients*

(Classified by Type of Service and Year in Which Infantile Paralysis Patients Were First Admitted)

| Type of Service | Before 1930 | 1931-1934 | 1935-1939 | 1940-1944 | 1945-1947 | Not Stated | Total Hospitals |
|---|---|---|---|---|---|---|---|
| Number of Hospitals Admitting Poliomyelitis Patients | | | | | | | |
| General | 184 | 30 | 56 | 202 | 257 | 290 | 1,019 |
| Orthopedic | 39 | 3 | 7 | 5 | 1 | 4 | 63 |
| Isolation | 21 | 2 | 3 | 1 | 2 | 5 | 34 |
| Institutional | 4 | 4 | 2 | 4 | .. | 19 | 33 |
| Psychiatric | 3 | .. | .. | 2 | 5 | 16 | 26 |
| Children | 12 | 1 | 1 | .. | .. | 5 | 19 |
| Tuberculosis | 3 | 1 | 1 | .. | 2 | 4 | 11 |
| Convalescent | 4 | 1 | .. | 3 | 2 | 1 | 11 |
| Chronic | 4 | .. | .. | .. | .. | 1 | 5 |
| Industrial | 1 | .. | .. | .. | .. | 1 | 2 |
| Total | 275 | 62 | 70 | 217 | 269 | 350 | 1,243 |

TABLE 5.—*Hospitals Admitting Poliomyelitis Patients*

(Classified by Control and Year in Which Infantile Paralysis Patients Were First Admitted)

| Control | Before 1930 | 1931-1934 | 1935-1939 | 1940-1944 | 1945-1947 | Not Stated | Total Hospitals |
|---|---|---|---|---|---|---|---|
| Number of Hospitals Admitting Poliomyelitis Patients | | | | | | | |
| U. S. Army | 11 | 2 | 1 | 17 | 5 | 18 | 54 |
| U. S. Navy | 5 | 1 | 1 | 12 | 3 | 5 | 27 |
| U. S. P. H. Service | 3 | 1 | 1 | 2 | .. | 10 | 17 |
| Veterans Admin | 3 | 3 | 2 | 7 | 28 | 18 | 61 |
| Indian | 2 | 2 | 4 | 1 | 5 | 6 | 18 |
| Other federal | .. | 1 | .. | 1 | 2 | .. | 4 |
| State | 14 | 4 | 7 | 7 | 2 | 23 | 57 |
| County | 27 | 5 | 12 | 10 | 16 | 29 | 98 |
| City | 40 | 6 | 6 | 13 | 25 | 28 | 119 |
| City-County | 4 | .. | 1 | 6 | 3 | 7 | 21 |
| Church | 33 | 9 | 7 | 61 | 78 | 68 | 256 |
| Nonprofit Assn | 126 | 22 | 21 | 68 | 85 | 112 | 432 |
| Individual | 5 | 2 | 1 | 9 | 11 | 6 | 35 |
| Partnership | .. | 2 | 2 | 2 | 1 | 7 | 14 |
| Corporation | 2 | 2 | 4 | 4 | 7 | 12 | 31 |
| Total | 275 | 62 | 70 | 217 | 269 | 350 | 1,243 |

Seven general hospitals in Alaska reported the admission of poliomyelitis patients, four in the Canal Zone, one in Guam, fifteen in Hawaii, seven in Puerto Rico and two in the Virgin Islands. The information submitted by individual hospitals has been analyzed, and a complete list of the hospitals reporting facilities for poliomyelitis has been forwarded to the National Foundation for Infantile Paralysis. This list contains the name and location of each hospital, the type of service offered, ownership or control, general information on bed capacity, annual admissions and average daily census as well as the year in which infantile paralysis patients were first admitted for hospital care. Copies of all material, including lists and tabular data prepared in connection with this survey, are on file in the office of the Council on Medical Education and Hospitals, where the original reports submitted by individual hospitals are also available.

## NEW HOSPITALS REGISTERED

The following hospitals were registered by the Council on Medical Education and Hospitals of the American Medical Association at its meeting in Chicago, Oct. 23, 1949:

Tippins Hospital, Hartford, Ala.
Hartselle Hospital, Hartselle, Ala.
Benson Hospital, Benson, Ariz.
Holbrook Municipal Hospital, Holbrook, Ariz.
Gray-Barker Hospital, Jacksonville, Ark.
San Joaquin Hospital, Bakersfield, Calif.
Exeter Memorial Hospital, Exeter, Calif.
Kaiser Fontana Hospital, Fontana, Calif.
Bellevue Nursing Home, Gardena, Calif.
Imperial Valley Tuberculosis Sanatorium, Holtville, Calif.
Mojave Hospital, Mojave, Calif.
Permanente Hospital, Vallejo, Calif.
General Rose Memorial Hospital, Denver, Colo.
St. Joseph Hospital, Florence, Colo.
Veterans Administration Hospital, Grand Junction, Colo.
Governor Bacon Health Center, Delaware City, Del.
Belle Glade Memorial Hospital, Belle Glade, Fla.
Doctors' Hospital, Coral Gables, Fla.
Walton County Hospital, DeFuniak Springs, Fla.
Villa Rose, DeSoto City, Fla.
Theresa Holland Hospital, Leesburg, Fla.
Dr. Sheahan's Home for Convalescents, Miami Beach, Fla.
Our Lady of Angels Hospital, Pensacola, Fla.
Peachtree Sanitarium, Atlanta, Ga.
Thompson-Johnson Hospital, Elberton, Ga.
Minnie G. Boswell Memorial Hospital, Greensboro, Ga.
Dr. F. H. Sams Hospital, Reynolds, Ga.
University of Idaho Infirmary, Moscow, Idaho
Stibnite Hospital, Stibnite, Idaho
Mercer County Hospital, Aledo, Ill.
Herrick House, Bartlett, Ill.
Brown's Convalescent Home, Chicago, Ill.
Willow Bark Hospital, Danvers, Ill.
Dr. Weirick Rest Home, Elgin, Ill.
Edward Greer Hospital, Robinson, Ill.
Wabash Valley Sanitarium, Lafayette, Ind.
Coffeyville Memorial Hospital, Coffeyville, Kan.
Lindsborg Community Hospital, Lindsborg, Kan.
St. John Veterans Memorial Hospital, St. John, Kan.
Scott County Hospital, Scott City, Kan.
Jackson Hospital, Clinton, Ky.
Dyer Hospital, Kuttawa, Ky.
West Liberty Hospital, West Liberty, Ky.
Palms Hospital, Abbeyville, La.
Desporte Clinic Hospital, Bogalusa, La.
Wigginton Infirmary, Hammond, La.
Jena Hospital, Jena, La.
War Memorial Hospital, Leesville, La.
Napoleonville Hospital, Napoleonville, La.
Martin Clinic and Hospital, Winnfield, La.
Winnfield General Hospital, Winnfield, La.
Rogers Clinic and Hospital, Winnsboro, La.
Jenkins Memorial Hospital, Baltimore, Md.
Valleyhead Hospital, Concord, Mass.
Hudson Hospital, Hudson, Mass.
Ith Haven, Flint, Mich.
Del Vista Sanitarium, Plainwell, Mich.
Community Hospital, Watervliet, Mich.
Birches Sanitarium, Duluth, Minn.
Pool's Clinic Hospital, Cary, Miss.
Sallie Harris Clinic Hospital, Jackson, Miss.
Tahorian Hospital, Mound Bayou, Miss.
Evans Hospital, Water Valley, Miss.
Spence Hospital and Clinic, Kennett, Mo.
Lockwood Memorial Hospital, Lockwood, Mo.
Marian Hospital, St. Louis, Mo.
Kelling Clinic and Hospital, Waverly, Mo.
St. Francis Hospital, Osceola, Neb.
St. John Hospital, Spalding, Neb.
Kate Macy Ladd Convalescent Home, Far Hills, N. J.
Middlesex County Hospital for Infantile Paralysis, New Brunswick, N. J.
Gerald D. Champion Memorial Hospital, Alamogordo, N. Mex.
Rehoboth Mission Hospital, Rehoboth, N. Mex.
Chatham Community Hospital and Sanitarium, Chatham, N. Y.
Wee Haven, Haverstraw, N. Y.
Conklin Sanitarium, Ithaca, N. Y.
Mount Morris Park Hospital, New York City, N. Y.
Wicting-Johnson Memorial Hospital, Syracuse, N. Y.
Roanoke Chowan Hospital, Ahoskie, N. C.
Williams Clinic Hospital, Spruce Pine, N. C.
Mary B. Talbert Home and Hospital, Cleveland, Ohio
Haines Maternity Hospital, Jamestown, Ohio
Edmond Hospital, Edmond, Okla.
Baxter Hospital, Shawnee, Okla.
Retreat Hospital, Portland, Ore.
Veterans Administration Hospital, Providence, R. I.
United States Naval Hospital, Beaufort, S. C.
McClaren Medical Shelter, Greenville, S. C.
Community Memorial Hospital, Burke, S. D.
St. Anthony's Hospital, Martin, S. D.
Veterans Administration Center, Sioux Falls, S. D.
Bledsoe Memorial Hospital, Pikeville, Tenn.
Underwood Clinic Hospital-Amarillo Preventorium, Amarillo, Texas
Douglas Hospital Clinic, Beaumont, Texas
Boerne Hospital, Boerne, Texas
Allen Memorial Hospital, Commerce, Texas
Myers Hospital, Cotulla, Texas
Del Rio Hospital, Del Rio, Texas.
Eden Clinic Hospital, Eden, Texas
Peoples Hospital, Phoenix, Texas
Lee Memorial Hospital, Giddings, Texas
North Side Hospital, Houston, Texas
Veterans Administration Hospital, Houston, Texas
Cherokee Nursing Home, Jacksonville, Texas
Sid Peterson Memorial Hospital, Kerrville, Texas
Stanifer Hospital, Lamesa, Texas
Mason Memorial Hospital, Mason, Texas
McCulloch-Concho Cooperative Hospital, Melvin, Texas
Newton County Memorial Hospital, Newton, Texas
Medical Center Hospital, Pasadena, Texas
Hopkins County Memorial Hospital, Sulphur Springs, Texas
F. E. Seale Clinic Hospital, Tahoka, Texas
Dickey Clinic Hospital, Taylor, Texas
McCalip-Ivy Hospital, Weslaco, Texas
Sanpete Latter Day Saints Hospital, Mount Pleasant, Utah
White Cross Hospital, Salem, Va.
Asotin County Hospital, Clarkston, Wash.
New Riverview Hospital and Clinic, Raymond, Wash.
Memorial General Hospital, Elkins, W. Va.
Guthrie Hospital, Huntington, W. Va.
Doctors Hospital, Milwaukee, Wis.
Memorial Hospital, Powell, Wyo.
Goshen County Memorial Hospital, Torrington, Wyo.
Oto Hospital, Hilo, Hawaii
Yamanoto Hospital, Hilo, Hawaii
Malahia Home, Honolulu, Hawaii
Puerto Rico Radiotherapy Institute and Oncological Hospital, Santurce, Puerto Rico

# Medical Examinations and Licensure

## COMING EXAMINATIONS AND MEETINGS

### NATIONAL BOARD OF MEDICAL EXAMINERS

NATIONAL BOARD OF MEDICAL EXAMINERS. *Part III.* Boston, Chicago and New York, January. *Parts I and II,* Feb. 13-15. Centers where there are approved medical schools and five or more candidates. Exec. Sec., Mr. E. S. Elwood, 225 S. 15th Street, Philadelphia 2.

### EXAMINING BOARDS IN SPECIALTIES

AMERICAN BOARD OF ANESTHESIOLOGY: *Written.* Various locations, July 21. *Oral.* Philadelphia, April 23-27, Chicago, October 8-12. Sec., Dr. Curtis B. Hickcox, 745 Fifth Ave., New York 22.

AMERICAN BOARD OF INTERNAL MEDICINE: *Oral.* Chicago, Feb. 8-10, Boston, April 13-15. San Francisco, June 21-23. The oral examinations in the subspecialties will be held at the same time and places. Final date for filing applications for all examinations is Jan. 1. Asst. Sec., Dr. William A. Werrell, 1 West Main Street, Madison 3, Wis.

AMERICAN BOARD OF NEUROLOGICAL SURGERY: *Oral.* Chicago, June 3. Final date for filing applications is Jan. 1. Sec., Dr. W. J. Germain, 789 Howard Ave., New Haven, Conn.

AMERICAN BOARD OF OBSTETRICS AND GYNECOLOGY, INC. *Written and Reviews of Case Histories. Part I.* Various Centers. Feb. 3. Sec., Dr. Paul Titus, 1015 Highland Bldg., Pittsburgh.

AMERICAN BOARD OF OPHTHALMOLOGY: Boston, April. Sec. Dr. Edwin B. Dunphy, 56 Ivie Rd., Cape Cottage, Maine.

AMERICAN BOARD OF ORTHOPAEDIC SURGERY. *Part II,* New York City, Feb. 9-10. Sec. Treas., Dr. Harold A. Sofield, Room 1856, 122 S. Michigan Ave., Chicago.

AMERICAN BOARD OF PLASTIC SURGERY: Examinations are given in June and November of each year in the home town of applicants. Sec.-Treas., Dr. Louis T. Byars, 400 Metropolitan Bldg., St. Louis, Mo.

AMERICAN BOARD OF UROLOGY: *Written.* Various Centers, Dec. 3. *Oral and Clinical.* Chicago, Feb. 11-13. Sec., Dr. Harry Culver, 7935 Sunnyside Road, Minneapolis 21.

### BOARDS OF MEDICAL EXAMINERS

ALABAMA: *Examination.* Montgomery, June 27-29. Sec., Dr. D. G. Gill, 519 Dexter Avenue, Montgomery.

ALASKA: Juneau, March 7. Sec., Dr. W. M. Whitehead, Box 140, Juneau.

COLORADO: * Denver, Jan. 3-6. Sec., Dr. George H. Gillen, 831 Republic Building, Denver.

DELAWARE: *Examination.* Dover, Jan. 10-12. *Reciprocity.* Dover, Jan. 19. Sec., Dr. J. S. McDaniel, 229 State Street, Dover.

FLORIDA: * *Examination.* Jacksonville, Nov. 27-29. Sec., Dr. Frank D. Gray, 12 N. Rosalind Ave., Orlando.

GUAM: *Endorsement.* Agana, last Friday of each month. Sec., Capt. C. K. Youngkin, Dept. of Public Health, Guam, % F.P.O., San Francisco.

HAWAII: *Examination.* Honolulu, Jan. 9-12. Sec., Dr. I. L. Tilden, 881 S. Hotel St., Honolulu.

IDAHO: Boise, Jan. 9. Exec. Sec., Mr. Armand L. Bird, 305 Sun Building, Boise.

INDIANA: *Examination.* Indianapolis, June. Sec., Dr. Paul R. Tindall, 1138 K. of P. Bldg., Indianapolis.

IOWA: * *Examination,* Des Moines, Dec. 5-7. *Reciprocity.* Des Moines, Nov. 7, Dec. 5. Sec., Dr. M. A. Rayal, 506 Fleming Bldg., Des Moines.

KANSAS: Topeka, Dec. 8-9. Sec., Dr. J. F. Hassig, 905 N. Seventh St., Kansas City.

KENTUCKY: Louisville, Dec. 12-14. Sec., Dr. Bruce Underwood, 639 South Third Street, Louisville 2.

LOUISIANA: New Orleans, Dec. 8-10. Sec., Dr. Ray B. Harrison, 1307 Hibernia Bank Building, New Orleans 12.

MARYLAND: *Examination.* Baltimore, Dec. 13-16. Sec., Dr. Lewis P. Gundry, 1215 Cathedral St., Baltimore 1. *Homeopathic Examination.* Baltimore, Dec. 13-14. Sec., Dr. John A. Evans, 612 West 40th St., Baltimore.

MISSISSIPPI: *Reciprocity.* Jackson, December. Sec., Dr. Felix J. Underwood, State Board of Health, Jackson 113.

NEW HAMPSHIRE: Concord, March 8-9. Sec., Dr. John S. Wheeler, 107 State House, Concord.

NORTH CAROLINA: *Endorsement.* Raleigh, Jan. 23. Sec., Dr. Ivan Procter, 226 Hillsboro St., Raleigh.

NORTH DAKOTA: *Examination.* Grand Forks, Jan. 4-6. *Reciprocity.* Jan. 7. Sec., Dr. C. J. Glaspel, Grafton.

OHIO: *Examination.* Columbus, Dec. 12-14. Sec., Dr. H. M. Platter, 21 W. Broad St., Columbus.

OKLAHOMA: * *Examination.* Oklahoma City, June 7-8. Sec., Dr. Clinton Gallaher, 813 Braniff Building, Oklahoma City.

OREGON: * *Examination.* Portland, January. Exec. Sec., Mr. Howard I. Bobbitt, 608 Failing Building, Portland 4.

PENNSYLVANIA: *Examination.* Philadelphia or Harrisburg, January. Acting Sec., Mrs. Marguerite G. Steiner, 351 Education Building, Harrisburg.

PUERTO RICO: *Examination.* Santurce, March 7. Sec., Mr. Luis Cueto Coll, Box 3717, Santurce.

SOUTH DAKOTA: * Sioux Falls, Jan. 17. Sec., Dr. C. E. Sherwood, 300 First National Bank Building, Sioux Falls.

UTAH. *Examination.* Salt Lake City, June. Dir., Dr. Frank E. Loes, 324 State Capitol Building, Salt Lake City.

VIRGINIA: *Examination.* Richmond, Dec. 2-3. *Reciprocity.* Richmond, Dec. 1. Sec., Dr. K. D. Graves, 631 First St., S.W., Roanoke.

WASHINGTON: * Seattle, January. Director, Department of Licenses, Mr. Edward C. Dohm, Olympia.

WISCONSIN: * *Examination.* Madison, Jan. 10-12. Sec., Dr. C. A. Dawson, River Falls.

* Basic Science Certificate required.

### BOARDS OF EXAMINERS IN THE BASIC SCIENCES

ARIZONA: *Examination.* Tucson, Dec. 20. Sec., Mr. Francis A. Roy, Science Hall, University of Arizona, Tucson.

COLORADO: *Examination.* Denver, Dec. 7-8. Sec., Dr. Esther B. Starks, 1459 Ogden Street, Denver.

OKLAHOMA: *Examination.* Oklahoma City, April 11. Sec., Dr. Clinton Gallaher, 813 Braniff Building, Oklahoma City.

OREGON: Portland, Dec. 3. Sec., Mr. Charles D. Byrne, State Board of Higher Education, Eugene.

SOUTH DAKOTA: Vermillion, Dec. 2-3. Sec., Dr. Gregg M. Evans, 310 E. 15th St., Yankton.

TENNESSEE: *Examination.* Memphis, Dec. 30-31. Sec., Dr. O. W. Hyman, 874 Union Avenue, Memphis 3.

WASHINGTON: Seattle, January. Sec., Department of Licenses, Mr. Edward C. Dohm, Olympia.

WISCONSIN: Milwaukee, Dec. 3. Madison, April 1. Sec., Prof. W. H. Barber, Ripon College, Ripon.

# Bureau of Legal Medicine and Legislation

## MEDICOLEGAL ABSTRACTS

**Malpractice: Emergency as Justification for Operation.**—The plaintiffs, husband and wife, sued for damages for a technical assault arising out of an alleged unauthorized surgical operation performed by the defendant-physician. From a judgment in favor of the defendant, and from an order denying the plaintiffs' motion for a new trial, the plaintiffs appealed to the district court of appeal, second district, division 2, California.

For several months prior to the operation the plaintiff-wife, who will be referred to as plaintiff, had been treated by the defendant-physician for continued vaginal bleeding. In January 1946 the defendant made a pelvic examination and found what appeared to be a small fibroid tumor on the anterior surface of the uterus. In succeeding months other examinations revealed that the mass in the right ovarian region, at first about half as large as a walnut, to have grown to the size of a lemon. During July the plaintiff consulted physicians in Santa Barbara. One diagnosed her symptom as an ovarian cyst and the other as a growth on the uterus. Both recommended immediate operation. The plaintiff told the defendant of these examinations and recommendations. On Aug. 1, 1946, the plaintiff was again examined by the defendant, and he also advised operation, to which the plaintiff, after consulting with her husband, consented. The plaintiff testified that she consented only to the removal of her right ovary and nothing more. The defendant and his nurse testified that he told the plaintiff it might be necessary to remove the right ovary or the uterus, depending on the condition found when her abdomen had been opened, and that he promised not to remove both ovaries, which was the only limitation requested by the plaintiff.

On August 4 the plaintiff went to the hospital, where she signed a consent to "whatever anesthetic and operation which

may be decided to be necessary or advisable." A registered nurse signed as a witness. The plaintiff contended that she had no recollection of ever having signed a release and that she did not sign it before she had taken a sedative. The nurse who signed the consent as a witness testified that the plaintiff signed the release during the afternoon while she was awake and before any sedative had been given.

On Aug. 5, 1946, the defendant, assisted by another physician, performed the operation. On making the opening in plaintiff's abdomen they found that the ovaries were not diseased but that the mass which had been felt on examination was a large tumor attached to the uterus adjacent to the right ovary and that the uterine wall was filled with multiple fibroid tumors. The surgeons consulted about the condition found, agreed that a subtotal hysterectomy was necessary and proceeded with that operation. On completion of the operation the plaintiff's husband was told what had been done, and when the effects of the anesthetic had subsided the plaintiff was likewise told what had been removed. Neither of them expressed any dissatisfaction, and the postoperative course was normal.

The defendant, his assistant surgeon and another local physician all testified that the operation was necessary in accordance with the standards of practice in the community to preserve plaintiff's health and that she would have continued to suffer from the bleeding had the uterus not been removed. There was evidence that plaintiff's condition of health might have become worse, that the bleeding would have continued and that the tumor might have become malignant. The plaintiff, on the other hand, produced medical testimony that the operation was not necessary to preserve her health.

The plaintiff argued the facts on appeal, said the appellate court, on the theory that the evidence given by her and in her behalf was to be accepted without regard to the evidence of any other witnesses. The rule is to the contrary. A reviewing court must view the evidence in the light most favorable to the party successful in the trial court and resolve all conflicts in his favor. Our power, said the court, "begins and ends with a determination as to whether there is any substantial evidence" sustaining the judgment. By reason of this rule, the appellate court continued, it is sufficient to say that the evidence sustains the verdict of the jury and the ensuing judgment.

Several of the plaintiff's objections were with reference to the signed consent to the operation. Since the evidence was conflicting as to (1) the conversations between the plaintiff and defendant in which the plaintiff was told what operation was probably necessary, (2) their conversations in which the plaintiff orally consented to an operation and what operation she consented to, (3) when the written consent was signed, whether before or after the sedative had been administered, and (4) whether the plaintiff knew what she was doing when she signed it, the court was required to accept the verdict and judgment as conclusive on those matters. The document was general in its terms and contained a consent to whatever operation might be found to be necessary or advisable. The purpose of the operation was to stop the vaginal bleeding that had continued for several months and to remove the growth on the female organs. It was the defendant's duty to do whatever was necessary to effect a cure. In exercising his best judgment as to what was the proper course to pursue, he was performing the professional service for which he had been employed. When a surgeon is confronted with an emergency or an unanticipated condition, said the court, and immediate action is necessary for the preservation of the life or health of the patient and it is impractical to obtain consent to an operation which he deems to be immediately necessary, it is the surgeon's duty to do what the occasion demands within the usual and customary practice among physicians and surgeons in the same or similar localities, and he is justified in extending the operation and in removing and overcoming the condition without the express consent of the patient. The plaintiff did have a right to offer evidence to the effect that her signature was secured through fraud or duress or while she was under the influence of a sedative or for any other reason she did not know what she was signing, and she did testify that she was not aware of what she was signing and that she signed the document after a sedative had been administered. In both of these particulars, however, she was contradicted by the nurse who signed as a witness to her signature. In view of this conflict, said the court of appeals, the implied finding of the jury against her contentions will not be disturbed.

By the signed consent the plaintiff agreed to any "operation which may be decided to be necessary or advisable." This instrument furnished the basis for the admission of evidence that a necessity existed for the removal of two thirds of plaintiff's uterus and that it was necessary for the defendant and his assisting surgeon to make an emergent decision on discovery of its condition. The trial court did not err, said the court of appeals, in admitting such evidence, nor was there error in the instruction to the effect that, if a doctor is confronted with an emergency and uses his best judgment, he is justified in proceeding with the operation. The plaintiff contended that, although an emergency may have existed, the removal of her uterus was not necessary at that time. This argument, said the court, is without force. An "emergency" is an unforeseen combination of circumstances which calls for immediate action. When an emergency occurs there is an immediate necessity to cope with it. The condition of the plaintiff's internal organs was not ascertainable with certainty until an incision had been made. The existence of a large fibroid tumor on the uterus and multiple tumors and nodules on the inner walls constituted an emergency which required the surgeons, in the light of their experience, to determine at once whether the removal of the diseased portion was necessary for the preservation of the plaintiff's health. The growth of the mass within a few months from the size of defendant's thumb to that of a lemon indicated a serious condition which was recognized by the Santa Barbara surgeon who told the plaintiff the growth "would become as large as a baby if not removed." The plaintiff had communicated that statement to the defendant. He therefore had not only his own years of experience and the advice of his assisting surgeon but the opinion of the Santa Barbara doctor. The latter had advised the plaintiff that the preservation of her health depended on the removal of the foreign growth, together with that portion of the uterus to which it was attached. The defendant would have been subject to grave censure had he closed the incision and awaited the plaintiff's recovery from the effects of the anesthetic in order to have further consultation with her concerning the removal of the alien material. Accordingly the judgment in favor of the defendant physician was affirmed and the order denying the plaintiff's motion for a new trial dismissed.—*Wheeler v. Barber, 208 P. (2d) 68 (Calif., 1949).*

## Medical Motion Pictures

### FILM REVIEW

**On Our Own.** 16 mm., black and white, sound, 382 feet, showing time fourteen minutes. Produced in 1949 by RKO Pathe, Inc., with the cooperation of the New York State Rehabilitation Hospital, West Haverstraw, N. Y. Procurable on loan from The National Foundation for Infantile Paralysis, Inc., 120 Broadway, New York 5.

This film shows the latest steps in the rehabilitation of patients with advanced poliomyelitis as practiced at the New York Rehabilitation Institute. Many of the ideas first introduced at the Institute for the Crippled and Disabled in New York City are now followed in this program.

The training of the patient to meet the demands of daily living is shown. The early steps in instruction in ambulation, the proper method of learning to apply one's own braces, the methods of getting in and out of chairs and the various types of crutch gaits are demonstrated, and instructions in climbing curbs, crossing streets, entering buses and ascending stairs are shown.

The film is recommended as a satisfactory exposition of the more advanced methods of physical rehabilitation of the patient who has been seriously disabled by poliomyelitis.

The photography and narration are good.

# Current Medical Literature

## AMERICAN

The Association library lends periodicals to members of the Association and to individual subscribers in continental United States and Canada for a period of three days. Three journals may be borrowed at a time. Periodicals are available from 1938 to date. Requests for issues of earlier date cannot be filled. Requests should be accompanied by stamps to cover postage (6 cents if one and 18 cents if three periodicals are requested). Periodicals published by the American Medical Association are not available for lending but can be supplied on purchase order. Reprints as a rule are the property of authors and can be obtained for permanent possession only from them.

Titles marked with an asterisk (*) are abstracted below.

### Alabama State Medical Assn. Journal, Montgomery

**18:297-340 (May) 1949**

Congestive Heart Failure. J. T. Grimes.—p. 297.
Cutaneous Manifestations of Lymphoblastomas. I. D. London.—p. 300.
Critical Review of Fenestration Operation. E. R. Nodine.—p. 304.

**18:341-396 (June) 1949**

Primary Intracranial Tumors in Childhood. D. Buchanan.—p. 341.
Congestive Heart Failure. R. O. Russell.—p. 349.
Amebiasis. G. W. Millett.—p. 352.

### American Journal of Diseases of Children, Chicago

**77:703-816 (June) 1949**

Psychosomatic Symptoms Resulting from Impact of War: Observations in Civilian Medical Practice. H. Miller and D. W. Baruch.—p. 703.
*Streptomycin Therapy in Tuberculous Meningitis. A. Levinson.—p. 709.
*Treatment of Infantile Congenital Syphilis: Results with Aqueous Penicillin Alone in 60 Infants Followed for an Average of Two Years After Treatment. E. K. Rose, P. György and N. R. Ingraham Jr.—p. 729.
Comparison of Vitamin B1 Levels in Mothers and Their Newborn Infants. L. B. Slobody, M. M. Wilbur and J. Mestern.—p. 736.
Urinary Glycocyamine, Creatine and Creatinine: I. Their Excretion by Normal Infants and Children. R. G. Flood and R. W. Pinelli.—p. 740.
Pinworm Infection and Childhood Behavior. E. Denhoff and M. W. Laufer.—p. 746.
Plasma Vitamin A and Its Clinical Significance: Review. H. C. S. Aron.—p. 763.

**Streptomycin Therapy in Tuberculous Meningitis.**—The 19 patients with tuberculous meningitis treated by Levinson ranged in age between 6 months and 13 years. The patients were given 200,000 units of streptomycin intramuscularly every three hours. The treatment was continued for ninety days. Patients who entered the hospital in a lethargic state, sometimes even moribund, became alert within a few days. In several children the temperature dropped immediately; in others it dropped after several days. The author learned not to be too enthusiastic about the early favorable response. Patients who appeared to be doing well for a long time suddenly took a turn for the worse and died. Seven of the 11 patients who died had survived for more than seven weeks and 1 for almost seven months after the beginning of treatment. The 8 who are alive have survived from three to fifteen months since the onset of the disease. It is still too early to state that streptomycin produced complete recovery in tuberculous meningitis. Some of the patients reported as recovered or clinically well either died later or became mentally deficient. One must not consider a patient with tuberculous meningitis completely recovered, as relapses may occur at any time and may result fatally. In consideration of the almost 100 per cent mortality associated with tuberculous meningitis under previous methods of treatment, all patients with tuberculous meningitis should be treated with streptomycin.

**Penicillin in Infantile Congenital Syphilis.**—In a previous report on the use of penicillin in congenital syphilis Rose and her associates discussed selection of cases, dosages, reactions, complications, deaths and immediate response to treatment. This report concerns itself more with long term observation of whether clinical or serologic relapses may take place in spite of initial clinical improvement. Sixty infants with congenital syphilis were treated with penicillin and followed for periods up to three years. Fifty-three of these are alive. Of the 48 living patients treated with penicillin intramuscularly, 37 were apparently cured (clinically well and with seronegative reactions); 7 were clinically well but still showed seropositive reactions, though the titer was declining; 3 were well but revealed no change in titer. Two of the latter were recently retreated. Five patients were treated with penicillin by mouth, and of these 4 infants responded satisfactorily. One older child, 2½ years of age, responded well, but his reaction remained seropositive after retreatment. The age of the patient at the onset of treatment, rather than the dosage, or means of administration of penicillin, seemed to be the chief factor in determining satisfactory response; cures approached 100 per cent when treatment was commenced before the third month of life. The amounts of penicillin administered intramuscularly varied from 20,000 to 200,000 units per pound (44,000 to 440,000 per kilogram) of body weight.

### American Journal of Ophthalmology, Chicago

**32:1-272 (June) Part II, 1949. Partial Index**

Formation of Intraocular Fluid. J. S. Friedenwald.—p. 9.
Aniridia with Ectopia Lentis and Secondary Glaucoma: Genetic, Pathologic and Surgical Considerations. A. Callahan.—p. 28.
Gene Producing Various Defects of Anterior Segment of Eye with Pedigree of Family. H. F. Falls.—p. 41.
Three Cases of Marcus Gunn Phenomenon in Two Generations. H. F. Falls, W. T. Kruse and C. W. Cotterman.—p. 53.
Electrocoagulation of Sclera: Reduction in Ocular Volume and Pathologic Changes Produced. H. G. Scheie and B. Jerome.—p. 60.
Fate of Transplanted Ciliary-Body Tissue. E. P. Danforth.—p. 91.
Effects of Testicular Extract on Certain Ocular Structures. R. K. MacDonald.—p. 96.
Use of Alkyl-Dimethyl-Benzyl Ammonium Chloride for Maintenance of Sterility in Solutions. D. T. Hughson and N. C. Styron.—p. 102.
Effectiveness of Streptomycin in Treatment of Experimental Conjunctivitis Caused by Hemophilus Sp. D. J. Davis and M. Pittmen.—p. 111.
*Aureomycin in Ocular Infections: Study of Its Spectrum. A. E. Braley and M. Sanders.—p. 119.
Uveitis and Toxoplasmin Sensitivity. J. K. Frenkel.—p. 127.
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Histopathology of Interstitial Keratitis Due to Congenital Syphilis. C. Weskamp.—p. 793.
Present Concept of Therapy of Ocular Syphilis. D. O. Harrington and R. W. Hency.—p. 806.
Streptomycin in Clinical Ophthalmology. A. E. Schultz and J. R. Grunwell.—p. 813.
Fundus Lesions in Tuberculous Meningitis and Miliary Pulmonary Tuberculosis Treated with Streptomycin. M. A. Dollfus and C. H. Albaugh.—p. 821.
Removal of Intraocular Nonmagnetic Foreign Bodies: with Report of 6 Cases. J. S. Shipman.—p. 835.
Evaluation of Anisotropic Case Reports. P. W. Miles.—p. 835.

**Aureomycin in Ocular Infections.**—Braley and Sanders used aureomycin borate locally and aureomycin hydrochloride intramuscularly in 401 patients with a wide range of ocular infections. The local use of 0.5 per cent solution of the drug produced no damage to the conjunctiva or cornea. The use of aureomycin was of value in 303 and of no value in 98 of the 401 cases. This antibiotic was effective against some of the gram-positive cocci and several gram-negative bacilli. It was found to be an effective therapeutic agent in inclusion conjunctivitis and in herpes simplex of the cornea. Its therapeutic effect in epidemic keratoconjunctivitis will require further investigation before results can be evaluated. It is more effective in epidemic keratoconjunctivitis than any of the other antibiotics or drugs tried. The intramuscular administration of aureomycin hydrochloride did not give rise to toxic reactions, and in only 1 patient was any general effect noted. A secondary anemia developed which was easily controlled by the administration of iron. The hydrochloride of aureomycin is somewhat irritating on intramuscular injection, but this irritation can be controlled

by the addition of a small amount of procaine hydrochloride. There is some indication that aureomycin may be a valuable antibiotic in the treatment of uveitis. Aureomycin has a wide spectrum of activity in ocular infections.

## American Journal of Physiology, Baltimore

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Pancreatic Diabetes in Calf. E. T. Cook, J. A. Dye and E. L. McCandless.—p. 349.
Work Performance of Adrenally Insufficient Rats Given Adrenal Cortex Extract by Continuous Intravenous Injection. D. J. Ingle and J. E. Nezamis.—p. 365.
Failure of Adrenal Cortical Hormones to Protect Against Cold in Young Normal and Adrenalectomized Rats. D. E. Holtkamp, R. M. Hill, B. B. Longwell and others.—p. 368.
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Variations of Vascular Reactivity in Normal and Hypertensive Dogs. I. H. Page and R. D. Taylor.—p. 412.
Effect of Hyaluronidase on Passage of Fluid and of T-1824 Through Capillary Wall. S. K. Elster, M. E. Freeman and A. Dorfman.—p. 429.
Urinary Flow and Excretion of Solutes During Osmotic Diuresis in Hydropenic Man. S. Rapoport, W. A. Brodsky, C. D. West and B. Mackler.—p. 433.
Improvements on Artificial Kidney: Experimental Study of Its Application to Dogs Bilaterally Nephrectomized or Otherwise Deprived of Renal Function. J. Vasatta, E. E. Muirhead and A. Grollman.—p. 443.
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Enzyme Studies on Human Blood. IV. Interrelation of Heparin and Fibrinogen Fractions. G. Y. Shinowara.—p. 458.

## American Journal of Public Health, New York

### 39:713-838 (June) 1949. Partial Index

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*Histoplasmin Sensitivity Among Cattle. M. L. Furcolow and J. S. Ruhe.—p. 719.
Histoplasmin Sensitivity and Coccidioidal Infection: I. Occurrence of Cross-Reactions. C. E. Smith, M. T. Saito, R. R. Beard and others.—p. 722.
*Isolation of Virus of Newcastle Disease from Human Beings. W. L. Ingalls and A. Mahoney.—p. 737.
Morbidity Surveys: Morbidity Survey in Public Health Work. G. St. J. Perrott.—p. 741.
How Processing Affects Nutritive Values of Grain Foods. F. W. Nordseth.—p. 751.
Nutrient Retention During Canned Food Production. E. J. Cameron, R. W. Pilcher and L. E. Chiforn.—p. 756.
Possible Significance of Milk and Water in Spread of Virus Infections. G. C. Brown.—p. 764.
The Dentist in the National Program of Cancer Control. A. V. Deibert.—p. 772.

**Histoplasmin Sensitivity Among Cattle.**—Furcolow and Ruhe show that histoplasmin reactors occur in cattle and that their geographic distribution in Kansas resembles that of histoplasmin reactors in human beings. Determination of the age-specific rates for cattle and men in a single county in Kansas makes it evident that the rates are similar in human beings and cattle of like age. From this it is deduced that both cattle and men are probably infected from the same outside source and that cattle do not constitute an animal reservoir of importance in the spread of the disease to human beings.

**Virus of Newcastle Disease in Human Beings.**—Ingalls and Mahoney report 2 cases of conjunctivitis thought to be due to the virus of Newcastle. One case occurred in a broiler plant operator on whose premises Newcastle disease was in progress; the second case occurred in a veterinary student who, in the course of his clinical work, autopsied 3 chickens affected with acute Newcastle disease. In the broiler plant operator identification of the virus was confirmed by hemagglutination, hemagglutination inhibition, serum neutralization technic and antibody response in chickens. In the student identification of the virus was confirmed by hemagglutination, hemagglutination inhibition and serum neutralization. Virus sent to the Pathologic Division, U. S. Bureau of Animal Industry, was identified as Newcastle virus. This is believed to be the first reported case of the isolation of the virus of Newcastle disease from man in the United States.

## American Review of Tuberculosis, New York

### 59:601-728 (June) 1949

Empyema as Complication of Chronic Pulmonary Tuberculosis. O. Auerbach.—p. 601.
Tuberculous Spontaneous Pneumothorax. B. Hyde and L. Hyde.—p. 619.
*Use of Aureomycin in Pulmonary Tuberculosis. M. M. Steinbach, A. S. Doonerief and A. S. Buchberg.—p. 624.
Question of Contagion in Coccidioidomycosis. Study of Contacts. H. E. Bass, A. Schoney and R. Berhe.—p. 632.
*Pulmonary Infiltration Associated with Sensitivity to Histoplasmin: Report of Case. D. W. Zahn.—p. 636.
*Correlated Study of Tuberculin, Histoplasmin and Coccidioidin Sensitivities with Pulmonary Calcifications in the Rocky Mountain Area. W. K. Absher and F. Cline Jr.—p. 643.
Tuberculous Pericarditis: Report of Case with Ten Year Follow-Up. S. Kreimin and J. A. Conley.—p. 650.
Streptomycin in Treatment of Tuberculous Pericarditis: Report of 3 Cases. R. P. Johnson and B. A. Berru.—p. 656.
Streptomycin in Experimental Tuberculosis: III. Effect on Pathogenesis of Early Tuberculosis in Guinea Pig Infected with Streptomycin-Sensitive H37 Rv Tubercle Bacilli. W. Steenken Jr. and P. C. Pratt.—p. 664.
Id.: IV. Effect on Pathogenesis of Early Tuberculosis in Guinea Pigs Infected with Streptomycin-Resistant H37 Rv Tubercle Bacilli. P. C. Pratt and W. Steenken Jr.—p. 674.
Transitory Infiltrates in Lungs with Eosinophilia (Loeffler's Syndrome): Review with Report of Case. V. F. Woolf and W. J. Gould.—p. 679.
Tuberculous Esophago-Cutaneous Fistulae Treated with Streptomycin and Gastrostomy: Report of Case. J. F. Lawson.—p. 687.
Skin Tuberculin Reaction for Assay of Tuberculin in Guinea Pigs. G. Chen and R. W. Sarber.—p. 692.
Inhibition of Tuberculin Type Reaction by Antihistaminic Drugs and Rutin. L. H. Criep, M. I. Levine and T. H. Aaron.—p. 701.

**Aureomycin in Pulmonary Tuberculosis.**—Steinbach and associates administered aureomycin to 3 patients with active, exudative forms of pulmonary tuberculosis. The oral route of administration was more satisfactory than the parenteral because adequate serum levels were obtained and there was little, if any, toxic effect. Although the drug was found to have tuberculostatic properties in vitro, there was no improvement in the 3 patients studied.

**Histoplasmin Sensitivity with Pulmonary Infiltration.**—According to Zahn, many instances of pulmonary calcification are not the result of previous infection with the tubercle bacillus but represent the end stage of infection with Histoplasma capsulatum. The practical importance of pulmonary lesions associated with histoplasmin sensitivity occurring in persons who do not react to tuberculin cannot be overemphasized. Such lesions, if not carefully investigated, may lead to an erroneous diagnosis of tuberculosis. Such a case concerned a man aged 26. His condition met the three criteria established for possible subclinical cases of histoplasmosis: (1) the individual has skin sensitivity to histoplasmin but not to tuberculin; (2) the lesion must persist at least two months, and (3) laboratory and clinical examinations must exclude the presence of tuberculosis and conditions such as sarcoidosis or Hodgkin's disease. The picture of the entity "benign histoplasmosis" has not yet been fully observed, and definitive statements regarding treatment cannot be made. The supposition that patients with this disease require little or no treatment has no basis and conceivably could lead to serious harm. These patients should be closely observed and followed with serial clinical laboratory and roentgenographic studies.

**Pulmonary Calcifications in Rocky Mountain Area.**—Absher and Cline say that extensive investigative studies have been undertaken concerning the etiologic factors responsible for multiple pulmonary calcifications. The results have cast doubt on the earlier concept that all multiple lung and hilar calcifications are tuberculous in origin. It now appears that fungous infections may play a significant role in the production of these calcifications, and a considerable number of cases have been shown to be associated with histoplasmin skin sensitivity. Histoplasma capsulatum infection occurs only in a relatively small endemic section of the country, namely: the East Central States. It would appear that the problem is of no practical concern to the physician of the Rocky Mountain Area. The fallacy of such thinking was illustrated to the authors. They conducted

a survey of 1,000 veterans and Veterans Administration personnel in the Rocky Mountain Area relative to the problem of pulmonary fungous infections. Each subject was skin tested with purified protein derivative of tuberculin, 0.0005 mg., coccidioidin in a dilution of 1:100 and histoplasmin in a dilution of 1:100. The results of these skin tests were correlated with roentgenograms of the chest of the persons tested, 404 reacted to tuberculin alone and 14 of these showed multiple pulmonary calcifications; 73 reacted to histoplasmin alone, of whom 8 showed multiple pulmonary calcifications; 110 reacted to both histoplasmin and tuberculin, and in this group 16 showed multiple pulmonary calcifications. Twenty-four cases of hilar and/or parenchymal calcifications were noted in persons reacting negatively to all antigens. These observations confirm the findings of the U. S. Public Health Service investigators that the so-called benign histoplasmosis is not endemic in the Rocky Mountain Area. No diagnostic pattern or distribution of pulmonary calcifications was noted in either tuberculin-positive or histoplasmin-positive persons. It was observed that "halo" type pulmonary calcifications are not limited to histoplasmin-sensitive persons.

## Annals of Surgery, Philadelphia

**129:737-894 (June) 1949**

Calcium Deposits in the Vicinity of Shoulder and of Other Joints. J. A. Key.—p. 737.
Partial Hepatectomy with Intrahepatic Cholangiojejunostomy: Useful Addition to Technical Methods for Management of Common Duct Stricture. H. Wilson and C. E. Gillespie.—p. 756.
Combined Supraduodenal and Transduodenal Exploration of Common Bile Duct. H. Mahorner.—p. 766.
Application of Technics of Reconstructive Surgery to Certain Problems in General Surgery. T. G. Blocker Jr., J. H. Hendrix Jr., G. C. Herrmann and E. Hall.—p. 777.
Thrombosis and Embolism: Five-Year Experience of Small General Hospital. R. C. Wigginton, W. H. Parsons and W. K. Parks.—p. 784.
*Comparison of Effectiveness of Newer Antibiotics in Experimental Peritonitis; Preliminary Report. G. H. Yeager, C. H. Ingram and W. A. Holbrook Jr.—p. 797.
*Effect of Intramuscular and Intrathecal Administration of Streptomycin in Normal Dogs and in Dogs with Meningitis Due to Escherichia Coli. C. Pilcher and E. R. Smith.—p. 816.
Ultraviolet Radiation as Adjunct in Control of Post-Operative Neurosurgical Infection; 11. Clinical Experience 1938-1948. B. Woodhall, R. G. Neill and H. M. Drats.—p. 820.
Reduplication of Stomach: Report of Case. G. T. McCutchen.—p. 826.
Management of Patients with Bleeding from Upper Gastro-Intestinal Tract with Buffer and Thrombin Solution. B. M. Daly, C. G. Johnston and G. C. Penberthy.—p. 832.
*Appraisal of Pancreatoduodenal Resection: Follow-Up Study of 61 Cases. R. B. Cattell and L. J. Pyrtek.—p. 840.
Results of Treatment of Patients with Hypertension by Total Thoracic and Partial to Total Lumbar Sympathectomy, Splanchnicectomy and Celiac Ganglionectomy. K. S. Grimson, E. S. Orgain, B. Anderson and others.—p. 850.
Evaluation of Treatment of Essential Hypertension by Sympathectomy. R. M. Peshkin Jr.—p. 872.
Presacral Enterogenous Cyst. C. L. Perry and J. W. Merritt Jr.—p. 881.

**Antibiotics in Peritonitis.**—Yeager and co-workers report the following experiments on dogs. The abdomen was entered through a right rectus incision and the appendix was drawn into the wound. Mesenteric attachments were divided, and the appendical vessels were clamped, divided and ligated. The distal half of the appendix was traumatized with a crushing clamp, the viscera replaced, and the incision closed. Immediately after operation each animal received 50 cc. of castor oil by stomach tube. Ten animals were used as controls. Of these, 8 died of acute diffuse peritonitis and 2 recovered. Ten animals were treated with streptomycin for eight days. Of these, 4 died of peritonitis and 6 recovered. Ten animals were treated with aureomycin for eight days. Of these, only 1 animal died, as late as the ninth day; 9 animals recovered. Chloramphenicol (chloromycetin®) was not available at the time of this study in sufficient quantity for a fair comparison. The animals in which it was used survived. Two patients with infections of the urinary tract due to Escherichia coli and 2 patients with generalized peritonitis were treated with aureomycin with favorable results. Other workers had suggested that the major field of usefulness of aureomycin is in infections with rickettsia and certain of the virus group. The results noted in the present study warrant more extensive observations of its effects in bacterial infections.

**Streptomycin in Normal Dogs and in Dogs with Meningitis Due to Escherichia Coli.**—Pilcher and Smith studied the effects of streptomycin in normal dogs and in dogs with meningitis due to Escherichia coli. Studies were made on several groups of normal dogs and in 100 animals in which Esch. coli meningitis had been produced. Intramuscular injection of streptomycin in the normal dog does not result in a significant amount of the drug in the cerebrospinal fluid. In dogs with Esch. coli meningitis intramuscular injection of streptomycin produces a slightly higher but therapeutically inadequate level in the cerebrospinal fluid. Intrathecal injection of large amounts of streptomycin may produce severe irritative and toxic effects. The severity and duration of these effects is approximately proportional to the size of the dose. The optimum daily intrathecal dose in the dog seems to be approximately 500 units of streptomycin per kilogram of body weight. Intramuscular streptomycin is ineffective against meningitis due to Esch. coli. Intrathecal streptomycin in Esch. coli meningitis is helpful but inadequate. Combined intrathecal and intramuscular therapy of meningitis due to Esch. coli has a beneficial effect on mortality rate, survival time and duration of positive cultures in blood and cerebrospinal fluid.

**Pancreatoduodenal Resection: Follow-Up of 61 Cases.**—According to Cattell and Pyrtek pancreatoduodenal resection, as described by Whipple and associates in 1935, was the first attempt to apply the principles of radical surgical measures for cancer to these serious and relatively inaccessible lesions. In a six year period, from 1942 to 1948, a total of 165 patients with carcinoma in the region of the head of the pancreas were observed at the Lahey Clinic, and on 56 of these a pancreatoduodenal resection was performed. During this time 5 additional patients had pancreatoduodenal resections for benign disease, giving a total of 61 cases of pancreatoduodenal resection. The authors stress the following points: 1. The operation is technically feasible. 2. With proper selection of cases and the employment of a two stage operation in selected cases, the operative mortality can be maintained at a level similar to that for other gastrointestinal cancers. 3. Physiologic functions as far as the gastrointestinal tract, the pancreas and liver are concerned can be established and maintained. 4. Carcinoma of the ampulla can be cured in an appreciable number of cases. 5. Pancreatoduodenal resection should be confined to favorable lesions. 6. Carcinoma of the head of the pancreas has not yet been cured. 7. The operation of pancreatoduodenal resection as now employed is suitable for carcinoma of the ampulla. Pancreatoduodenal resection for carcinoma of the head of the pancreas must be modified or discarded.

## Archives of Internal Medicine, Chicago

**83:593-732 (June) 1949**

Ataxias: Review. D. Fiske.—p. 593.
*Radioactive Isotopes in Study of Peripheral Vascular Disease: I. Derivation of Circulatory Index. M. T. Friedell, F. Schaffner, W. J. Pickett and I. F. Hummon Jr.—p. 608.
*Id.: II. Method of Evaluation of Various Forms of Treatment. F. Schaffner, M. T. Friedell, W. J. Pickett and I. F. Hummon Jr.—p. 620.
*Clinical Studies on Dicumarol® Hypoprothrombinemia and Vitamin K Preparations: I. Superiority of Vitamin K1 Oxide Over Menadione Sodium Bisulfite U.S.P. and Synkayvite® in Reversing Dicumarol® Hypoprothrombinemia. D. F. James, I. L. Bennett Jr., P. Scheinberg and J. J. Butler.—p. 632.
Endocarditis in "Main Line" Opium Addicts: Report on 11 Cases. W. F. Luttgens.—p. 653.
Asymptomatic Myocardial Infarction. M. E. Landman, H. S. Anhalt and A. Angrist.—p. 665.
Gastroenterology: Review of Literature from July 1947 to July 1948. J. B. Kirsner, W. L. Palmer, W. E. Ricketts and others.—p. 677.

**Radioactive Isotopes in Vascular Disease: Derivation of Circulatory Index.**—Friedell and associates describe tests in normal subjects and in some with arteriosclerosis, from results of which they derived a circulatory index that they believe will be of diagnostic and prognostic significance. One hundred patients from the wards of Cook County Hospital were each given an intravenous injection of 200 microcuries of radioactive phosphate, $P^{32}$, and the build-up curves indicating deposition of the radioactive isotope were determined. A semilogarithmic plotting of these curves resulted in what was essentially a straight line; the reciprocal of its slope was considered the index of circulation. These indexes fell into a normal dis-

tribution pattern, and the patients with arteriosclerosis and those over 50 years of age fell into well defined groups. The diffusion of $P^{32}$ into the tissues was faster in older and in arteriosclerotic patients. Capillary dilatation is thought to be the chief cause of this phenomenon. The authors believe that stasis due to capillary dilatation rather than vascular spasm is responsible for the signs and symptoms of peripheral arteriosclerosis.

**Radioactive Isotopes in Evaluation of Treatments for Vascular Diseases.**—Friedell and associates studied the effect of treatment on an index of circulation, calculated from the rate of diffusion of intravenously injected radioactive phosphorus into the tissues of the lower extremity, which was described in the preceding paper. Four forms of treatment were used: administration of histidine monohydrochloride and ascorbic acid; lumbar sympathetic block with procaine hydrochloride; administration of test doses of 500 mg. of tetraethylammonium chloride, and lumbar sympathectomy. Thirty-four series of determinations were made on 26 patients, classified into four groups: patients for whom the circulatory index was (1) originally low and then rose toward normal; (2) originally low and later fell; (3) apparently originally normal and later fell, and (4) originally above normal and then rose even higher. The variations in the circulatory indexes were interpreted as signifying the response of the capillary bed to peripheral vasodilators. The capillaries are considered to have an independent circulation, based largely on the demand for and deficit of oxygen. The responses to treatment in the patients in the four groups were as follows: In group 1 the capillary tone was restored; in group 2 minor vasospastic elements were relieved but capillary dilatation persisted; in group 3 major vasospastic elements were relieved but capillary dilatation persisted or increased, and in group 4 deterioration of peripheral circulation was almost complete and amputation was required. The prognosis in groups 1 and 2 was favorable and in groups 3 and 4 unfavorable. The authors conclude that radioactive phosphorus is useful as a diagnostic and prognostic tool in the evaluation of peripheral vascular states, such as arteriosclerosis obliterans.

**Dicumarol® Hypoprothrombinemia.**—James and associates gave 101 patients dicumarol® in daily oral doses, 300 mg. the first day and 200 mg. on each successive day, until the prothrombin time exceeded that of normal control plasma diluted to concentration of 20 per cent with 0.85 per cent solution of sodium chloride. The patient was then either allowed to recover untreated to his normal prothrombin level or given large single doses of menadione sodium bisulfite U. S. P. (hykinone®), synkayvite® (tetrasodium salt of 2-methyl-1,4-naphthohydroquinone diphosphoric acid ester) or vitamin $K_1$ oxide (oxide of 2-methyl-3-phytyl-1,4-naphthoquinone). The efficiency of these substances was estimated by (1) the time elapsing between administration of the drug and the conversion of pronounced to moderate hypoprothrombinemia and (2) the time elapsing after administration of the agent until the appearance of a prothrombin level consistent with intravascular clotting. Vitamin $K_1$ oxide was strikingly more effective in both respects. For 26 patients given 0.5 Gm. or more of this material intravenously the prothrombin time arrived and stayed at a level lower than that of 30 per cent normal plasma in an average time of thirteen hours. When menadione sodium bisulfite (64 to 180 mg.) was given intravenously to 19 patients, this shortening of the prothrombin time was achieved in an average period of 4.7 days. When synkayvite® (100 to 500 mg.) was given intravenously to 6 patients, an average time of 5.3 days elapsed. Six patients with severe hypoprothrombinemia who were treated with 0.1 Gm. or more of vitamin $K_1$ oxide required an average of four hours to achieve a prothrombin concentration within what is generally regarded as a safe range. An analysis of time required for achievement of dicumarol® effect shows that about 1 of every 5 patients required five or more days to achieve significant therapeutic effect from dicumarol® in the usual doses. The requirement of an individual subject for dicumarol® is approximately predictable on the basis of the degree of his previous responsiveness to the drug. An exception to this situation occurs shortly after the administration of vitamin $K_1$ oxide, after which patients are relatively insensitive to dicumarol.®

## Archives of Neurology and Psychiatry, Chicago

**61:599-734 (June) 1949**

Muscular Atrophy in Diseases of Lower Motor Neuron: Contribution to Anatomy of Motor Units. G. Wohlfart.—p. 599.
Superiority Attitude and Rigidity of Ideas. H. J. Darmstadter.—p. 621.
Lesions of Spinal Cord (Transverse Myelopathy) in Acondroplasia. A. Vogt and R. L. Osborne.—p. 644.
Measurement of Sensation: I. Vibratory Sensation. J. A. Toomey, L. Kopecny and S. Mickey.—p. 663.
*Surgical Treatment of Sciatica: Results Three to Eight Years After Operation. D. H. Echols.—p. 672.
*Point of Action of 3-o-Toloxy-1,2-Propanediol (Lissephen®) and Effects on Nervous System. I. Finkelman.—p. 680.
Intrapeduncular Hemorrhage of Brain: Successful Operative Approach, with Evacuation of Clot and Seven and One-Fourth Year Observation Period. W. B. Scoville and J. L. Poppen.—p. 688.
Electroencephalogram After Injury to Spinal Cord in Man. J. K. Merlis and C. W. Watson.—p. 695.

**Surgical Treatment of Sciatica.**—According to Echols the painful state formerly called chronic or recurrent sciatica is now known to result from compression of a nerve root within the spinal canal or its foramen. There is still controversy concerning treatment. Many neurosurgeons are of the opinion that the compressed nerve root should be decompressed and the offending disk partially removed but that spinal fusion should not be performed. Many orthopedists are advocating some type of internal fixation of the spine at the time of removal of the disk (combined operation). The author, a neurosurgeon, has collaborated at the combined operation whenever it has been recommended by the orthopedist. When, after ten years' experience, he and his colleagues realized that they had acquired no convictions regarding the combined operation, they decided to make a follow-up study of 151 patients with a preoperative diagnosis of ruptured lumbar disk who had primary intraspinal exploration during the five year period ending Dec. 31, 1944. One hundred and nine had ruptured disks which were partially removed; 14 had combined operations (removal of ruptured disk plus spinal fusion in 8 and spinal fusion in only 6); in 9 patients exploration showed normal disks; 14 patients had a lesion of some other type, such as metastatic carcinoma, and in 5 patients exploration was incomplete. The present review is concerned with the 109 patients treated by partial removal of the disk. Of these 109 patients 91 per cent were classified as having a good result, because they were working full time without disability and with only minor complaints referable to the back and leg. Since results of operation for removal of a ruptured disk are so satisfactory in carefully selected cases, the combined operation would seem to be contraindicated except in unusual circumstances.

**Lissephen® and the Nervous System.**—Finkelman studied the effect of lissephen® (3-o-toloxy-1,2-propanediol) in general, as well as on peripheral nerves, the spinal animal, the decerebrate preparation, the motor cortex and the pyramids. Lissephen® in appropriate doses caused paralysis, immobility, disappearance of most of the reflexes, head drop and lowered response to sensory stimuli. In toxic doses it caused death from respiratory failure. The effect of lissephen® on peripheral nerve is unlike that of curare. Electrical studies revealed little or no change in rheobase, chronaxia, galvanic tetanus ration or repetitive stimuli ratios, even after toxic doses were administered. Lissephen® caused the disappearance of tone in a spinal animal. The flexor responses to nociceptor stimuli applied to the body were first to disappear, and later those applied locally disappeared. Then the contralateral extensor thrust, ankle clonus and fanning response of the toes disappeared. All these responses reappeared within thirty minutes, in that order, including the spasticity. Lissephen® caused immediate disappearance of the rigidity of a decerebrate animal. All the reflexes, including labyrinthine and tonic neck reflexes, were abolished. Within twenty-five minutes the rigidity, as well as the reflexes, reappeared. Lissephen® did not abolish strychnine spikes in the motor cortex, whereas those led off from the pyramids were suppressed. The effect of lissephen® lasts seven to thirty minutes, the longest action being observed in a spinal animal. Studies on peripheral nerve revealed that lissephen® does not act at the myoneural junction. There was evidence that the effect was not the result of anesthesia but was exerted on subcortical efferent pathways.

## Archives of Otolaryngology, Chicago

**49:575-694 (June) 1949**

Role of Allergy in Epidemiology of Common Cold. N. Fox and G. Livingston.—p. 575.
Congenital Choanal Atresia: New Transpalatine Technic. D. A. Dolowitz and E. B. Holley.—p. 587.
Which is the Preferable Method of Performing Caloric Test? L. B. W. Jongkees.—p. 594.
Benign Cysts of Paranasal Sinuses. H. F. Schuknecht and J. R. Lindsay.—p. 609.
Mixed Tumor of Region of Head. D. P. Cordray.—p. 631.

## Archives of Pathology, Chicago

**47:517-632 (June) 1949**

*Pulmonary Adenomatosis of Man: Review of Literature and Report of 9 Cases. L. L. Swan.—p. 517.
Megakaryocyte: III. Pseudothrombocytes. E. Schwarz.—p. 545.
Adrenal Pheochromocytoma. J. L. Pinniger and J. B. Brown.—p. 557.
Genic Factors in Visceral Asymmetry and in Development and Pathologic Changes of Lungs, Heart and Abdominal Organs. J. Torgersen.—p. 566.
Effect of Tripelennamine Hydrochloride on Burn Shock. R. M. Gunnar and R. E. Weeks.—p. 594.
*Primary Systemic Amyloid Disease: Report of Case Emphasizing Cardiac Involvement. J. B. Hartney, A. A. Biederman, J. M. Blumberg and C. L. Leedham.—p. 598.
Meckel's Diverticulum with Aberrant Pancreatic Tissue and Polyp Containing Gastric Glands. M. C. Wheelock and H. A. Teloh.—p. 612.

**Pulmonary Adenomatosis in Man.**—The object of this report, according to Swan, is (1) to review cases not included in those collected by Neuberger and Geever in 1942, (2) to present 9 cases from the files of the Army Institute of Pathology, (3) to examine theories concerning histogenesis and cause, and (4) to consider whether pulmonary adenomatosis is related to carcinoma of the lung. Swan believes that pulmonary adenomatosis is the preferable designation for so-called alveolar cell tumor of the human lung. If metastases occur, the term should be modified by adding the adjective cancerous (cancerous pulmonary adenomatosis). Criteria proposed for the diagnosis of pulmonary adenomatosis are: (1) alveolar cellular proliferation characterized by the appearance of tall columnar mucus-producing cells; (2) absence of an intrinsic tumor of the bronchial tree, and (3) absence of primary adenocarcinoma of any other part of the body. The disease apparently is not infectious. The majority of observers are of the opinion that pulmonary adenomatosis is an extrabronchial neoplasm with cancerous potentialities. In none of the cases presented was there conclusive evidence as to the exact site of origin. Although these tumors appear histologically noncancerous, clinically they must be considered cancerous, since they may kill by local growth or by metastasis.

**Primary Systemic Amyloid Disease.**—According to Hartney and his associates amyloid is a peculiar member of the group of connective tissue hyalins set apart from the others by the following characteristics: it appears in persons who have passed through a long, wasting illness and it involves principally the parenchymatous organs (liver, spleen and kidney) and the adrenal glands. To date, some 50 cases of primary systemic amyloidosis have been recorded in the literature. On 48 of these necropsy reports are available. Forty cases were reported up to 1945. The frequency of reports in the last several years indicates that this disease may not be as rare as was previously thought. An additional case is now reported. A woman aged 39 was hospitalized Feb. 5, 1948 and died eighteen days later. Necropsy revealed primary systemic amyloidosis involving the interstitial tissues of the heart, the liver, the spleen, the adrenal glands and the uterus, the small and medium-sized arteries of these organs, together with those of the kidneys, the ovaries, the uterine tubes, the gastrointestinal tract, the lungs, the pancreas and the bone marrow. This case fulfills the most important criteria of primary systemic amyloidosis in that there is no evidence of any preexisting condition recognized as capable of bringing about the formation of amyloid. This case further substantiates the observation of Lindsay that primary systemic amyloidosis should be considered in the differential diagnosis of cardiovascular disease whenever the cause is obscure and the symptom complex and the clinical observations are bizarre.

## Diseases of Chest, Chicago

**15:631-762 (June) 1949**

*Value of Streptomycin in Treatment of Tuberculosis. H. C. Sweany.—p. 631.
Synthesis of Prevailing Patterns of Bronchopulmonary Segments in the Light of Their Variations. E. A. Boyden.—p. 657.
Surgical Treatment of Emphysematous Blebs and Bullae. O. T. Clagett.—p. 669.
Tetralogy of Fallot: Surgical Treatment. A. Rodriguez Diaz and H. Anido.—p. 684.
Importance of Various Mechanical and Circulatory Postoperative Pulmonary Complications. L. F. Knopp.—p. 690.
Electrocardiographic Patterns in Pneumothorax. R. N. Armen and T. V. Frank.—p. 709.
Abstract of Replies to Questionnaire on Intrapleural Artificial Pneumothorax. E. W. Hayes.—p. 720.
Treatment of Aortic Aneurysms of Wrapping with Foreign Body. J. K. Poppe.—p. 726.
Nutrition in Far Advanced Tuberculosis: Preliminary Study. C. W. Anderson, J. N. Medefind and J. D. Davis.—p. 734.
Cervical Vagus Sympathetic Block in Pulmonary Embolism. W. A. Werner and L. H. Ferguson.—p. 741.

**Streptomycin in Tuberculosis.**—Sweany reviews the use of streptomycin in tuberculosis. Streptomycin suppresses the growth of practically all strains of tubercle bacilli for periods of several weeks to several months. Resistance to streptomycin develops partially or completely in about 80 per cent of strains of tubercle bacilli on or before one hundred and twenty days of treatment. Recent lesions (probably those retaining blood circulation) respond most favorably to treatment with streptomycin; lesions respond less favorably as they become more caseous or fibroid in character. The optimum dosage of streptomycin is around 1 Gm. a day, although 0.5 Gm. a day has been used with success. The author has given 0.5 Gm. a day to adult patients under 150 pounds (68 Kg.) and 0.75 Gm. a day to those over 150 pounds for forty-five to one hundred and twenty days or until the development of bacillary resistance. In infants and children under 50 pounds (22.7 Kg.) 0.1 to 0.3 Gm. has been found adequate. Only 1 instance of labyrinth disease has developed on this regimen. Of 863 patients in whom treatment was completed with the 0.5 to 0.75 Gm. dosage, 470 (54.5 per cent) were improved in a substantial and more or less permanent way, have recovered, are progressing toward recovery or have undergone surgical treatment. There were 670 nonsurgical cases, 425 of which were pulmonary. In these pulmonary cases 223 patients were improved. In the 245 nonsurgical, nonpulmonary cases, 148 patients showed improvement. Surgical intervention was recommended in 193 cases; 99 patients have successful operative treatment and 28 underwent surgical intervention but have had postoperative complications; 66 patients have refused surgical treatment or the operation has been delayed. In meningeal, miliary, bone, joint and genitourinary lesions, 1 to 1.5 Gm. of streptomycin is still recommended, but dihydrostreptomycin in doses up to 2 Gm. is preferred because of its lower neurotoxicity.

## Gastroenterology, Baltimore

**12:919-1048 (June) 1949**

*Gastric Perforation: Clinicopathologic Study. J. G. Shellito and A. B. Rivers.—p. 919.
Comparative Study of Colloidal Red Test in Liver Diseases with Special Reference to Zinc Turbidity, Thymol Turbidity and Bromsulphalein Tests. H. A. Strade, L. B. Dotti and S. J. Ilka.—p. 934.
Relationship Between Secretions of Gastric Mucosa and Its Morphology as Shown by Biopsy Specimens. I. J. Wood, R. K. Doig, R. Motteran and others.—p. 949.
Studies on Liver Function and Blood Proteins in Allergic Individuals. J. M. de la Vega and M. Salazar Mallen.—p. 959.
Gastroscopic Perforation of Esophagus and Stomach: Report of 3 Cases. L. M. Asher and S. Cohen.—p. 966.
Study of Action of Prostigmine on Bowel of Human Beings. J. M. McMahon, C. F. Code, W. G. Sauer and J. A. Bargen.—p. 970.
Bromsulfalein Reactions: Clinical and Experimental Study. S. J. Stempien and R. C. Rosenquist.—p. 978.
*Hereditary Hemorrhagic Telangiectasia with Intestinal Bleeding: Case Report and Therapy with Topical Thrombin. K. Plummer, J. O. Burke and J. P. Williams.—p. 988.

**Gastric Perforation.**—Shellito and Rivers report on 105 perforations of the stomach, the records of which were taken from the files of the Mayo Clinic. Perforation occurred in 10 per cent of the cases of benign gastric ulcer encountered at the Mayo Clinic from 1936 through 1946 and in 1 per cent of the cases of a malignant gastric lesion encountered from 1908

through 1947. The average age of patients in both groups was 52.7 years. The ratio of males to females was 6.8:1 in the cases of perforated benign gastric ulcer and 3.9:1 in the cases of perforated malignant lesion of the stomach. The pancreas was involved in only 51 per cent of the patients who had perforation of a malignant lesion of the stomach and in 81 per cent of those with perforated benign gastric ulcer. Perforations of malignant gastric lesions were usually larger than those of benign lesions. A lesion in the stomach which at operation appears larger than 2 cm. in diameter should be considered malignant until proved otherwise. Duodenal ulcer was associated with benign perforated gastric ulcer in 13 per cent of patients. There was no association of duodenal ulcer with perforated gastric lesions of the adenocarcinoma type. A rigid abdomen in the presence of a gastric ulcer of the perforating type should be considered indicative of a surgical emergency. In the presence of free gastric perforation, either benign or malignant, the operation of choice is gastric resection. If this procedure is not feasible, a primary closure followed by gastric resection at a later date is the procedure of choice. Walled-off perforation of the stomach, benign or malignant, is best served by gastric resection. There are no diagnostic features in the history, physical examination or the laboratory examination which will serve to differentiate the benign from the malignant gastric lesion. The only certain procedure, in such a differentiation, is the pathologic examination of the lesion.

**Topical Thrombin in Intestinal Bleeding.**—Plummer and associates report a case of severe intractable hemorrhage due to hereditary hemorrhagic telangiectasia involving the ileum and jejunum and requiring transfusion of 86 pints (41 L.) of whole blood in eighty-four days to insure survival during efforts at hemostasis. The usual agents which are supposed to affect capillary permeability and coagulation, rutin, vitamin C, vitamin K and moccasin venom, were used in maximum doses to no avail. Topical thrombin, 5,000 units every eight hours, instilled into the duodenum was followed by immediate and striking improvement with cessation of bleeding after five days. At the time of reporting, six months later, there had been no recurrence.

## Illinois Medical Journal, Chicago

**96:325-382 (June) 1949**

Challenge: President's Address. P. E. Hopkins.—p. 340.
Vagotomy in Treatment of Gastro-Intestinal Ulceration. A. M. Vaughn. —p. 343.
Experience with Cardiolipin. D. B. Dorsey.—p. 350.
X-Ray Therapy of Inflammatory Lesions of Eyelids. E. C. Albers and H. M. Buley.—p. 355.
Regional Ileitis and Neurosis. G. A. Wiltrakis and J. C. Hudelt.—p. 360.
Abdominal Pregnancy. R. K. Kincey.—p. 364.
Acute Regional Ileitis in 80 Year-Old Male. A. C. Meyer and A. R. K. Matthews.—p. 367.
Chronic Right Lower Quadrant Pain with Urinary Symptoms. E. L. Etherton, J. H. Shikes and C. A. Siler.—p. 369.
Intussusception of Appendix. M. E. Conway.—p. 370.

## Journal of Infectious Diseases, Chicago

**84:221-318 (May-June) 1949**

Toxic and Allergic Manifestations Produced by Tissues and Fluids of Ascaris: I. Effect of Different Tissues. J. F. A. Sprent.—p. 221.
Virus Isolation and Serologic Studies on Patients with Clinical Mumps. E. W. Hook Jr., S. O. Poole and W. F. Friedewald.—p. 230.
Further Studies on B3W, Anaerogenic Group in Enterobacteriaceae. C. A. Stuart, S. Formal and V. McGann.—p. 235.
Further Observations of Inhibitor in Human Serums of Hyaluronidase Produced by Strain of Hemolytic Streptococcus. G. J. Friou. —p. 240.
Blood *Pu* as Factor in Genetic Resistance to Mouse Typhoid. J. A. Weir.—p. 252.
Cysteine and Related Compounds in Growth of Yeastlike Phase of Histoplasma Capsulatum. S. B. Salvin.—p. 275.
Studies on Suppression of Fungus Growth by Thiourea: III. Effects of Protein Fractions, Amino Acids and Thiol Compounds. M. Tager, H. B. Hales and T. S. Danowski.—p. 284.
Infections Induced in Mice by Local Application of Streptococci and Pneumococci to Nasal Mucosa and by Intrapulmonary Instillation. L. S. Soskin.—p. 290.
Isolation of Eastern Equine Encephalomyelitis Virus from Naturally Infected Monkey (Macacus Philippinensis). H. R. Liveray.—p. 306.
Study of Mode of Action of Substances Which Enhance Bacterial Invasiveness. C. Sandage and O. K. Stark.—p. 310.

## Journal of Thoracic Surgery, St. Louis

**18:279-434 (June) 1949**

Segmental and Lobular Physiology and Pathology of Lung. E. D. Churchill.—p. 297.
*Intrathoracic Meningocele. F. X. Byron, E. E. Alling and P. C. Samson. —p. 294.
Use of Tubed Pedicle Grafts in Carcinoma of Upper Esophagus. E. M. Bricker, T. H. Burford and B. Eiseman.—p. 304.
Transthoracic Small Bowel Substitution in High Stricture of Esophagus. A. W. Harrison.—p. 316.
Completing Multiple-Stage Operation for Atresia of Esophagus. C. R. Lam.—p. 327.
Decortication in Pulmonary Tuberculosis Including Studies of Respiratory Physiology. J. Gordon, R. Brock and E. S. Wells.—p. 337.
Decortication of Unexpanded Tuberculous Lung Following Pneumothorax. J. A. Weinberg and J. D. Davis.—p. 363.
*Physiologic Observations Concerning Decortication of Lung. G. W. Wright, L. B. Yee, G. F. Filley and A. Stranahan.—p. 372.
Allergy in Pulmonary Tuberculosis with Special Reference to Autotuberculination. A. R. Judd.—p. 389.
Cystic Disease of Lung. J. E. Strode.—p. 404.
Glomus Tumor of Mediastinum. G. V. Brindley Jr.—p. 417.

**Intrathoracic Meningocele.**—Byron and co-workers state that a high percentage of mediastinal tumors that are observed to be uniformly opaque, well defined, rounded or lobulated masses in the posterior mediastinum will prove to be neurofibromas. When there is also bony absorption of adjacent posterior rib ends and the cutaneous manifestations of neurofibromatosis of von Recklinghausen, the diagnosis of mediastinal neurofibroma is usually made. The authors cite 3 cases which indicate that this typical picture may lead one into error. In the first of these patients, when the chest was entered posterolaterally through the bed of the fourth rib, a huge thin-walled cyst was found. Further dissection revealed the cyst wall to be continuous with the dura through a defect arising as the result of enlargement and coalescence of the intervertebral foramen of the second and third dorsal vertebrae, absorption of the pedicle of the third dorsal vertebra and erosion of the posterolateral aspects of the bodies of the second and third dorsal vertebrae. Through this defect could be seen the spinal cord and, higher in the spinal canal, at about the level of the seventh cervical segment, the inferior aspect of a small intraspinal cyst. The defect was closed by utilizing a portion of the cyst wall or dura as a flap. This was then covered by a free pleural graft and a layer of absorbable gelatin sponge. This patient did well following operation. In the second patient no effort was made to remove the meningocele, since it was asymptomatic and in a protected place. The third patient died in the course of the operation, and postmortem examination revealed a tissue-thin meningeal sac projecting extrapleurally through the enlarged intervertebral foramen of the seventh cervical vertebra. The spinal cord was visible through the opened sac. Reviewing the literature, the authors discuss 5 cases; in 2 of these excision of the sac was performed, and the patients died as a result of empyema and meningitis. The chief diagnostic aid in differentiating between meningocele and neurofibroma is the intraspinal injection of opaque medium.

**Physiologic Observations Concerning Decortication of the Lung.**—Wright and associates present data obtained from a study of 3 cases of decortication of the lung. One is representative of chronic traumatic hemothorax; another is an example of chronic tuberculous empyema, pneumothorax and unexpandable lung, and the third is a case of spontaneous hemopneumothorax that persisted with a febrile reaction but sterile pleural fluid. Plombage (either air or liquid) plus the immobilizing effect of a relatively nonelastic membrane overlying the pleural surface seriously cripples the respiratory apparatus. Surgical evacuation of the plombage and removal of the visceral peel will, as in case 1, effect a restitution to virtually normal pulmonary and circulatory function. Reexpansion of lung tissue is not always followed by recovery of normal pulmonary and circulatory function of the involved lung. This was observed in cases 2 and 3. In case 2 decortication eventuated in an abnormal relationship between circulation and ventilation in the reexpanded lung tissue. The ultimate degree to which the reexpanded lung regains its normal physiologic capacities probably depends on the extent and

nature of the histologic alteration in the collapsed lung and probably also to the length of time the lung is collapsed. In none of these 3 cases was the parietal membrane peeled from the underlying pleura; in case 1, this apparently made no great difference in the ultimate outcome. The membrane was present during a relatively short period. In case 2, the membrane had been present for years and, in spite of its not having been removed, there was evidence of some improvement in mobility of the underlying lung tissue. As to whether there would be better mobility had the parietal membrane been stripped is a matter of conjecture. It is apparent from these studies that reexpansion and an improvement of lung mobility are of no avail if ventilation and circulation are not improved at the same time. These studies also indicate the need for detailed physiologic investigation of patients before and after decortication. Data thus obtained might in time enable one to predict the degree to which the reexpanded lung will recover physiologic integrity after decortication.

## Kentucky Medical Journal, Bowling Green

### 47:163-198 (May) 1949

The Thyroid—Résumé of Medical Versus Surgical Therapy of Its Diseases. J. D. Hancock.—p. 169.
Practice of Pediatrics in Small Town. R. L. Rice.—p. 173.
Treatment of Rocky Mountain Spotted Fever. R. B. Warfield.—p. 177.
Prevention of Rheumatic Fever. R. A. Lyon.—p. 180.
Trends of Immunization of Children. H. S. Andrews.—p. 185.
Face Presentations. N. M. Garrett.—p. 190.
The Skin as Organ of Expression: Case Report. C. Baron.—p. 192.

### 47:199-246 (June) 1949

Acute Pancreatitis and Rational Therapy. J. B. Floyd Jr.—p. 220.
Pediatric Surgery. E. B. Mersch.—p. 224.
Rehabilitation in Chronic Disease. H. E. Richey.—p. 228.
Brain Tumors: Some Remarks on Diagnosis. E. G. Grantham and L. H. Segerberg.—p. 233.
Recent Advances in Urology. R. Lich Jr.—p. 237.

## Minnesota Medicine, St. Paul

### 32:569-672 (June) 1949

Cerebral Angiography. L. A. French and P. S. Blake.—p. 589.
*Nevoxantho-Endothelioma. C. W. Laymon and E. P. Schoch.—p. 596.
Inguinal and Femoral Herniaplasty. C. B. McVay.—p. 599.
Adrenal Sympathoblastoma (Neuroblastoma). E. A. Loomis and G. L. Loomis.—p. 606.
Laboratory Studies of Cerebrospinal Fluid in Meningitis and Poliomyelitis. H. H. Jolfe and A. H. Wells.—p. 608.
Sarcoma of Uterus. F. H. Magney.—p. 613.
The Child, the Surgeon, the Operation. R. A. Jensen.—p. 616.
Value of Rorschach Test. G. R. Kamman.—p. 621.
Cholecystectomy: Technic for Occasional Operator. G. M. A. Fortier.—p. 625.

**Nevoxanthoendothelioma.**—According to Laymon and Schoch nevoxanthoendothelioma was the term used by McDonagh in 1912 to describe an odd type of xanthoma characterized by the development, early in life, of a group or groups of yellowish or yellowish brown papules or nodules, chiefly on the extensor surfaces. The authors report 4 cases and stress that nevoxanthoendothelioma is an unusual type of juvenile xanthoma, characterized by yellow or reddish nodules present at birth or developing shortly thereafter. The general health is not affected, and there is a tendency toward spontaneous involution, although the lesions may persist for several years. The values for the blood lipoids are normal. The histologic picture is distinctive and consists of a proliferation of the connective tissue and an infiltrate of histiocytes and endothelial giant cells. Foam cells and Touton giant cells are also present. Appropriate stains reveal lipoids in the infiltrated areas.

## Missouri State Medical Assn. Journal, St. Louis

### 46:391-458 (June) 1949

Ectopic Pregnancy: Report of 106 Cases. W. H. Masters.—p. 405.
Dermatitis of Hands. R. L. Sutton Jr.—p. 410.
Polyarteritis Nodosa. R. M. Brecher.—p. 414.
Need of Belonging in War and Peace: Its Effect on Deliquency. N. Blackman.—p. 417.
Primary Atypical Pneumonia Treated with Aureomycin. M. Bernreiter and J. M. Holthaus.—p. 420.
Carcinoma of Colon and Rectum. E. D. Sugarbaker.—p. 421.
Practical Aspects of Diet in Pregnancy. R. N. White.—p. 430.

## New England Journal of Medicine, Boston

### 240:863-904 (June 2) 1949

Metabolism of Radioactive Elements Created by Nuclear Fission. J. G. Hamilton.—p. 863.
*Radiation Syndrome. E. E. Painter and A. M. Brues.—p. 871.
Varicocele: Symptomatologic and Surgical Concepts. R. O. Olson and E. P. Stone.—p. 877.
Eosinophilia During Intensive Gold Therapy. E. H. Reisner Jr., L. Lapin and O. Steinbrocker.—p. 881.
Neurophysiology, 1942-1948. J. F. Fulton.—p. 883.
Hamartoma of Cloacal Tissue in Renal Pelvis.—p. 891.
Mucocele of Large Bowel Due to Strictures in Ulcerative Colitis of Defunctioned Bowel.—p. 894.

**The Radiation Syndrome.**—Painter and Brues summarize the theoretic aspects of the biologic action of ionizing rays on the organism and outline the clinical manifestations of the radiation syndrome. Their discussion is based on a review of the literature and on experimental data gathered during the past five years. They show that there are three distinct periods (initial shock, acute and subacute) in the radiation syndrome, produced by a single total-body thirty-day $LD_{50}$ of external radiation or of internal emitters of alpha or gamma rays. The initial shock may last from three to forty-eight hours. Occasionally rabbits and chickens die during the initial period. Other animals, such as dogs, rats, guinea pigs and goats, do not die but show prostration, diarrhea, urination, lacrimation and decreased food and water consumption. In addition, man and the dog often vomit. The acute period lasts from nine to twenty-one days, during which most of the animals die. Some of the radiation effects are directly due to destruction of certain tissue elements. Many others are indirect and may be attributed to infections, toxic agents, hypoxia and other secondary factors. Animals surviving thirty days or more fall into the subacute category. A severe anemia, emaciation and graying of dark-haired animals are the usual signs of the radiation syndrome in this phase. The chronic phase is characterized by shortening of life and sporadic increase in tumors. No single clinical reaction is peculiarly specific for radiation damage. A similar preterminal course with leukopenia and high sensitivity of dividing cells is found with such agents as nitrogen mustards and urethane. The acute terminal course with fever and petechiae is characteristic of acute infections and of many diseases. With the exception of the initial reaction, the acute phenomenon of the radiation syndrome follows a latent period during which cell damage and atrophy of the more sensitive tissues occur. Since these tissues (blood-forming organs, intestine and gonads) are proliferative, it is tempting to suggest that damage to chromosomes, which is known to lead to cell death at a subsequent cell division, accounts for the damage.

### 240:905-946 (June 9) 1949

Responsibilities of Medical Education. C. S. Burwell.—p. 905.
*Effect of Rice Diet on Level of Blood Pressure in Essential Hypertension. D. G. Loofbourow, A. L. Galbraith and R. S. Palmer.—p. 910.
Aspiration of Elbow Joint in Treatment of Fractures of Head of Radius. T. B. Quigley.—p. 915.
Neurophysiology, 1942-1948. J. F. Fulton.—p. 920.
Ulcer of Esophagus, with Perforation into Mediastinum and Left Pleural Cavity. Subacute Mediastinitis. Acute Empyema.—p. 927.
Perirenal Hematoma.—p. 933.

**Rice Diet in Essential Hypertension.**—Rice diet was used in the Hypertension Clinic of the Massachusetts General Hospital for a year. The authors attempted to determine whether this method is practical for use with ambulatory patients observed once a week while living in their normal surroundings and eating with other members of the family and what clinical results are obtained when the treatment is applied to such a group. The patient eats daily 4 cupfuls of cooked rice (about 1 cupful measured before cooking); fruits, either raw or cooked, with the exception of avocados, dates, nuts and tomatoes (canned fruits can be used if no preservative has been added); sugar (white only) is taken as desired; fluids are limited to 3 or 4 cupfuls of fruit juices, which should not contain artificial flavoring. The total number of patients instructed on the rice diet in nine months was 56. The success in maintaining patients on the diet is shown by the following figures: strict adherers, 16; moderate adherers, 20, and delinquents, 20. A significant drop in blood pressure occurred in 6

of the 16 patients who adhered strictly to the diet, and in the group of moderate adherers a significant drop occurred in 3 of 20 patients. Loofbourow and her associates feel that the method can be used with safety if the patients are carefully followed at frequent intervals.

## Oklahoma State Medical Assn. Jour., Oklahoma City

### 42:181-236 (May) 1949

Induction of Labor. J. W. Baxter.—p. 184.
Role of Cervical Sympathetics in Treatment of Pain. A. Stowell.—p. 185.
Primary Renal Neoplasms. K. F. Swanson and C. Hulse.—p. 190.
Surgical Treatment of Endometriosis. L. A. Gray.—p. 192.
Resume of Insulin Shock Treatment at Central Oklahoma State Hospital. J. A. Rieger.—p. 196.

### 42:237-272 (June) 1949

Juvenile Diabetes. C. A. Brown.—p. 240.
Unusual Strangulated Hernias in Infants. H. C. Dodson Jr. and H. A. Burnett.—p. 243.
Diagnosis and Care of Pyloric Stenosis by Pediatrician. G. K. Stephens. —p. 246.

## Pediatrics, Springfield, Ill.

### 3:735-882 (June) 1949. Partial Index

Pathogenesis of "Vernix Membrane"; Relation to Aspiration Pneumonia in Stillborn and Newborn Infants. H. C. Miller and T. R. Hamilton. —p. 735.
*Aureomycin in Staphylococcic Meningitis Complicating Subarachnoid Hemorrhage in Sickle Cell Anemia. J. R. Almklov and A. E. Hansen. —p. 764.
Ovarian Tumors in Childhood. H. W. Dargeon.—p. 773.
Electroencephalography in Child Neurology and Psychiatry. H. H. Jasper.—p. 783.
Jet Injection in Pediatric Practice. J. G. Hughes, R. G. Jordan and F. S. Hill.—p. 801.
*Congenital Hemolytic Disease Resulting from A-O Isoimmunization. N. Mitchell, A. H. Moss, B. Redner and others.—p. 813.
Infantile Cerebral Palsy Cases with Severe Mental Deficiency: Relationship of Etiology to Type of Neurologic Syndrome. H. Yannet.—p. 820.
Meningococcemia with Meningitis Accompanied by Bilateral Gangrene of Lower Extremities (Waterhouse-Friderichsen Syndrome). C. P. DeFaccio and E. E. Dresner.—p. 837.
Brain Tumors in Children. H. M. Keith, W. M. Craig and J. W. Kernohan.—p. 839.
Phonocardiographic Differentiation of Murmur of Mitral Insufficiency from Some Commonly Heard Adventitious Sounds in Childhood. T. N. Harris, S. Friedman and C. F. Haub.—p. 845.

**Aureomycin in Staphylococcic Meningitis.**—Almklov and Hansen report the occurrence of a spontaneous subarachnoid hemorrhage in a Negro boy aged 11 years with sickle cell anemia. Of the 8 cases mentioned in the literature, 5 have occurred in children. In the study of sickle cell anemia there is an increasing awareness of subarachnoid hemorrhage and other neurologic complications such as hemiplegia, coma and convulsions. In the authors' case there developed meningitis due to Staphylococcus albus, which for twelve days resisted combined treatment with penicillin, streptomycin and sulfadiazine. Treatment was discontinued; because the patient's prognosis seemed hopeless it was thought justifiable to use an antibiotic agent experimentally. The patient was given 20 mg. of aureomycin intramuscularly every eight hours. Within two days the patient improved remarkably and was taking fluids by mouth. After five days the spinal fluid revealed only 5 cells per cubic millimeter; no organisms were seen on smear, and cultures were sterile. Aureomycin was given for a total of ten days, by the end of which time the patient had become alert and could recognize persons. There were no untoward reactions to the intramuscular administration of the drug. In vitro studies disclosed that when penicillin and aureomycin or streptomycin and aureomycin were combined, the result was a decrease in the effectiveness of either drug against staphylococci. The feature which probably played a role in the excellent response of the patient to aureomycin therapy was the decision to discontinue all other therapeutic agents. More effective results in the treatment of staphylococcic infections may be obtained if aureomycin is used as the sole antibiotic agent.

**Congenital Hemolytic Disease.**—Mitchell and others report 1 premature male infant and 2 full term female group A infants, born of Rh-positive mothers belonging to group O, in whom diagnosis of congenital hemolytic disease was based on a rapid onset of jaundice within twenty-four hours of birth, occurrence of anemia, presence of nucleated red blood cells in the peripheral smear, immunologic evidence of isoimmunization as determined by the high anti-A agglutinin titer in the mothers' serum (1:6,000, 1:10, 120 and 1:5,000) and demonstration of circulating isoimmune bodies in the blood of the male infant. The infants died on the sixth, third and fifth day of life. Typical anatomic changes of hemolytic disease were present at necropsy. Extensive kernicterus of the basal ganglions, hippocampal nuclei, periventricular pontine nuclei, cerebellar dentate nuclei and medullary olives in all cases also confirmed the diagnosis. The finding of free circulating antibodies in the male infant's blood obtained post mortem is of particular interest. These anti-A agglutinins were active only in albumin-plasma dilutions. The retention of the agglutinating property of this antibody in the blood of both infant and mother even after addition of specific Witebsky substances of A and B blood group indicate that it is probably an immune antibody. It is believed that A-O isoimmunization has been proved in these 3 cases.

## Pennsylvania Medical Journal, Harrisburg

### 52:905-1032 (June) 1949

Present Status of Corneal Grafting. J. M. McLean.—p. 929.
Malignant Lesions of Nasal Fossae and Sinuses: Diagnosis and Treatment. A. T. Smith and T. P. Eberhard.—p. 932.
Reduction of Mortality in Surgery of the Aged. W. L. Estes Jr. —p. 937.
Contrasting Methods in Management of Uterine Malignancy. L. C. Scheffey.—p. 944.
Traumatic Arteriovenous Fistula of Lower Extremity. J. R. Watson. —p. 953.
Intestinal Intubation in Field of Pediatrics. J. A. Jones.—p. 958.
Endocrine Factors in Dermatology. P. H. Drant.—p. 966.

## Proc. of Staff Meet. of Mayo Clinic, Rochester, Minn.

### 24:309-340 (June 8) 1949

*Aureomycin in Treatment of Penicillin-Resistant Staphylococcic Bacteremia. D. R. Nichols and G. M. Needham.—p. 309.
Pathology of Intrapulmonary Arteries and Arterioles in Mitral Stenosis. W. F. Larrabee, R. L. Parker and J. E. Edwards.—p. 316.
Congenital Atresia of Esophagus with Tracheo-Esophageal Fistula Treated by Primary Esophageal Anastomosis: Report of 8 Cases. W. M. Ashe and W. D. Seybold.—p. 327.
Senile Hyaline Scleral Plaques: Report of 3 Cases. E. P. Drescher and J. W. Henderson.—p. 334.
Streptomycin Treatment of Ozena. K. M. Simonton.—p. 337.

**Aureomycin in Staphylococcic Bacteremia.**—In vitro studies revealed to Nichols and Needham that 34 of a total of 50 strains of staphylococci were resistant to penicillin and 14 of these 34 were resistant also to streptomycin. Staphylococcic bacteremia was discovered during 1948 in 15 patients at the Mayo Clinic, and 12 of the 15 strains of staphylococci were resistant to penicillin, while 3 of the 15 were resistant to streptomycin. In 6 patients the authors employed aureomycin, and 4 of these 6 recovered. The other 2 patients improved greatly when the drug was first given, and their blood cultures became negative. Intermittent intravenous administration was used at the onset of treatment in 4 of the 6 cases. A dose of 200 to 500 mg. of aureomycin in 250 cc. isotonic sodium chloride solution was administered once every four hours, every six hours or every twelve hours. Ten to fifteen minutes usually were allowed for the injection. The oral method of administration was used alone in 2 of the 6 cases and to complete the course of treatment in the other 4 cases. The dose of 500 mg., 750 mg. or 1 Gm. of the drug was administered orally every four or every six hours. Nausea and vomiting were encountered in 3 cases when this method of administration was used. Because of the investigative nature of this study, use of aureomycin was not started until late in the course of the infection. Results were not entirely satisfactory. Successful treatment of staphylococcic bacteria always has been dependent on the administration of an effective chemotherapeutic agent as early in the course of the infection as possible. In the future, when aureomycin is administered early in the course of the disease, a higher percentage of cures may well be anticipated. The authors do not advocate the use of aureomycin as a routine in staphylococcic bacteremia; in vitro studies should be instituted immediately to determine the sensitivity of the organism to different antibiotics. If the organism is resistant to penicillin but sensitive to aureomycin, or if the infection does not respond to penicillin, then aureomycin would appear to be the drug of choice.

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An asterisk (*) before a title indicates that the article is abstracted. Single case reports and trials of new drugs are usually omitted.

### Annals of Rheumatic Diseases, London

**8:90-180 (June) 1949**

Potential Reversibility of Rheumatoid Arthritis. P. S. Hench.—p. 90.
*Effect of Hormone of Adrenal Cortex (17-Hydroxy-11-Dehydrocorticosterone: Compound E) and of Pituitary Adrenocorticotrophic Hormone on Rheumatoid Arthritis: Preliminary Report. P. S. Hench, E. C. Kendall, C. H. Slocumb and H. F. Polley.—p. 97.
Drugs in Treatment of Rheumatic Disorders. N. Mutch.—p. 105.
*Massive Salicylate Therapy in Rheumatic Fever. G. Watkinson.—p. 120.
Thiocyanil Administration, and Thyroidectomy in Experimental Polyarthritis of Rats. H. B. Tripi, W. C. Kuzell and G. M. Gardner. —p. 125.
Comparative Results of Copper Salts and Gold Salts in Rheumatoid Arthritis. J. Forestier.—p. 132.
Serum Anti-Tryptase in Chronic Rheumatic Disease. H. Coke.—p. 135.
Familial Incidence of Rheumatoid Spondylitis. B. Rogoff and R. H. Freyberg.—p. 139.
Aetiology of Ankylosing Spondylitis. H. F. West.—p. 143.
Opaque Arthrography of the Knee Joint. A. E. Jewett.—p. 149.
Rheumatoid Arthritis and Amyloid Disease. B. Lush, E. Fletcher and J. F. Buchan.—p. 156.
Generalized Myositis Fibrosa: Case Report. J. A. Strong.—p. 158.

**Adrenocortical Hormone in Arthritis.**—Hench and associates state that the adrenal cortical hormone 17-hydroxy-11-dehydrocorticosterone, compound E, has been administered to 14 patients with severe or moderately severe rheumatoid arthritis. In each case improvement in clinical features and in sedimentation rates began to occur within a few days. When administration of the endocrine substance was discontinued, the disease generally promptly relapsed. Essentially similar clinical results accompanied by various biochemical effects were obtained from the administration of the pituitary adrenocorticotropic hormone to 2 patients. The rarity of these compounds now and in the immediate future, and the limited scope of these preliminary data (especially regarding prolonged administration) make inappropriate now the use of the term "treatment" except in an investigative sense.

**Salicylate Therapy of Rheumatic Fever.**—Watkinson describes results of salicylate therapy in 80 recruits at three Royal Air Force reception and training centers in whom rheumatic fever developed between April 1947 and July 1948. All were aged 18 except 2, whose ages were 23 and 26. All but 3 were men, and 15 admitted to a history of previous rheumatic fever. A history of recent infection of the upper part of the respiratory tract was obtained in 71.2 per cent, hemolytic streptococci being cultured from a throat swab on admission in 29 of 55 cases. An average period of 2.1 weeks occurred between the precipitating infection and the rheumatic attack. Three groups of patients were studied at three station hospitals employing varying salicylate dosage. Groups were comparable in numbers, in severity and in the incidence of previous rheumatic attacks. In the first group of 25 patients, salicylates were withheld in 14, but the others were given small doses not exceeding 100 grains (6.5 Gm.) daily. The second group was given 200 grains (13 Gm.) of salicylates daily, and 10 received in addition 100 grains (6.5 Gm.) of sodium bicarbonate daily. In group 3 adequate salicylate levels exceeding 30 mg. per hundred cubic centimeters were maintained by massive oral therapy. Dosage in this group showed large individual variation, from 120 to 600 grains (7.8 to 39 Gm.) daily. A significant reduction in the period of fever, arthralgia and active infection was demonstrated in the group receiving massive therapy. No reduction in the relapse rate or in the incidence of carditis was seen.

### British Journal of Experimental Pathology, London

**30:85-160 (April) 1949. Partial Index**

Laterosporin A and Laterosporin B, Antibiotics Produced by B. Laterosporus. E. M. Barnes.—p. 100.
Acute Experimental Calcium Chloride Acidosis. A. D. T. Govan and J. Parkes.—p. 105.
Nature of Some Antibiotics from Aspergilli. D. Gill-Carey.—p. 119.
*Antibiotic Produced by Staphylococcus Aureus. J. F. Gardner.—p. 130.
Antibiotics from Penicillia. H. B. Burton.—p. 151.

**Antibiotic Produced by Staphylococcus Aureus.**—Gardner describes the production and properties of an antibiotic formed by a strain of Staphylococcus aureus. The properties of this antibiotic are such as to make it probable that it will have no therapeutic application.

### British Journal of Ophthalmology, London

**33:397-460 (July) 1949**

Toxoplasmosis: Summary of Disease with Report of Case. H. Ridley. —p. 397.
Vascular Changes in Diabetes with Particular Reference to Retinal Vessels: Preliminary Report. N. Ashton.—p. 407.
Contact Lenses: Analysis of Results of Use. A. G. Cross.—p. 421.
Nature of Malignant Choroidal Melanomata. E. Wolff.—p. 445.
Studies on Intra-Ocular Fluids: Part 3.—Penetration of Some Nitrogenous Substances Into Intra-Ocular Fluids. S. Duke-Elder, H. Davson and A. M. Woodin.—p. 452.
Interstitial Keratitis Occurring in Case of Reiter's Disease. E. E. Cass. —p. 454.

### British Journal of Radiology, London

**12:355-414 (July) 1949**

Structure of Biological Tissues as Revealed by X-Ray Diffraction Analysis and Electron Microscopy. W. T. Astbury.—p. 355.
Lateral Distribution of Ions Across Track of Ionizing Particle: Part I. Present Picture and Its Implications. J. Read.—p. 366.
Erythema Nodosum. J. H. Middlemiss.—p. 375.
Sesamoid at Elbow Analogous to Patella. G. L. Hardman.—p. 384.
Studies of Effect of Protraction of X Radiation by Twelve Fractionations on Erythema Reactions. H. Schöttelndreyer.—p. 386.
Carcinoma of Bladder. A. Jacobs, E. W. Riches and J. L. E. Millen. —p. 393.

### British Medical Journal, London

**2:1-40 (July 2) 1949**

Man and the Machine. C. W. C. Bain.—p. 1.
Tuberculous Empyema. D. A. Andersen.—p. 6.
*Penicillin in Treatment of Influenzal Meningitis. F. Braid and R. B. Meyer.—p. 11.
Study of Post-War Incidence of Breast-Feeding. F. H. M. Dummer. —p. 14.
Aschheim-Zondek and Hogben Pregnancy Tests Modified and Compared. F. W. Landgrebe and B. M. Hobson.—p. 17.
Simple Weight-Reducing Diet. H. L. Marriott.—p. 18.

**Penicillin in Influenzal Meningitis.**—Braid and Meyer present observations on 15 cases of influenzal meningitis treated in the Birmingham Children's Hospital. Eleven of these were treated with sulfadiazine and penicillin, 3 with sulfadiazine, penicillin and streptomycin and 1 with sulfadiazine and streptomycin. Twelve of the 15 children are alive, and all are quite well with the exception of one (case 3), who is spastic and mentally defective. These cases show that penicillin, combined with orally given sulfadiazine in adequate dosage—960,000 units daily for three weeks at three hour intervals intramuscularly, and 40,000 units daily intrathecally for about seven days after the cerebrospinal fluid is sterile—provides an effective remedy in the treatment of severe as well as of moderately severe cases of influenzal meningitis. The fact that the organism is known to develop resistance renders streptomycin less generally useful.

### Glasgow Medical Journal

**30:197-234 (June) 1949**

*Nitrogen Mustard Therapy in Reticuloses and Pulmonary Neoplasm: Report on 44 Cases. A. Brown and L. J. Davis.—p. 197.
Method for Estimation of Cholesterol in Urine Using Liebermann-Burchard Colour Reaction. W. M. B. Davidson.—p. 216.
Mapharside Treatment of 36 Cases of Lupus Erythematosus Discoides. T. Cochrane.—p. 222.
Use of Pertussis Vaccine in Day Nurseries. S. J. Strachan.—p. 228.

**Nitrogen Mustard in Reticuloses and Pulmonary Neoplasm.**—According to Brown and Davis the clinical use of the nitrogen mustards has been limited almost entirely to the bis and the tris forms, (methyl-bis [beta-chloroethyl] amine hydrochloride, and methyl-tris [beta-chloroethyl] amine hydrochloride). Most writers agree that the bis compound is less toxic and less liable to cause thrombosis, and it has been most widely used. The authors describe a clinical trial of this compound in 44 patients. These comprised 16 cases of Hodgkin's disease, 12 cases of various other disorders of the reticuloendothelial system and 16 cases of pulmonary neoplasm. The authors conclude that in none of these diseases should nitrogen mustard be regarded as an adequate substitute for radiotherapy. In Hodgkin's disease and allied conditions nitrogen mustard promises to be of value in conditions failing to respond satisfactorily to irradiation. In such cases it is probable that the administration of nitrogen mustard should be combined with further irradiation. In bronchogenic carcinoma nitrogen mus-

tard exerts a decided palliative effect in a proportion of cases and may consequently be of value in the relief of distressing symptoms when radiotherapy is not readily available.

## Journal of Physiology, Cambridge

**108:375-530 (June 15) 1949. Partial Index**

Method for Frequent Estimation of Forearm Blood Flow Under Conditions of Decreased Atmospheric Pressure. D. McK. Kerslake.—p. 398.
Enzymic Formation of Pressor Amines. H. Balcchho, P. Holton and G. H. Sloane Stanley.—p. 427.
Changes in Water and Chloride Distribution During Heavy Sweating. W. S. S. Ladell.—p. 440.
Effect of Application of Arterial Occlusion Cuff to Wrist on Blood Flow in Human Forearm. D. McK. Kerslake.—p. 451.
Timing of Certain Circulatory Events in Man. W. Schlapp and A. G. Walker.—p. 458.
Estimation of Adrenaline and Allied Substances in Blood. J. H. Gaddum, W. S. Peart and M. Vogt.—p. 467.
Effect of Nicotine on Diuresis Induced by Ethyl Alcohol. M. G. Eggleton.—p. 482.
Nature of Splenic Sympathin. W. S. Peart.—p. 491.
Dependence of Neuromuscular Transmission on Glucose. I. Hajdu and R. J. S. McDowall.—p. 502.
Noradrenaline in Tumors of Adrenal Medulla. P. Holton.—p. 525.

## Lancet, London

**2:1-40 (July 2) 1949**

Metabolism of Glutamic Acid. H. Waelsch.—p. 1.
*Ileostomy and Ulcerative Colitis. T. L. Hardy, B. N. Brooke and C. F. Hawkins.—p. 5.
*Use of English Male Toads in Pregnancy Test. A. Klopper and H. Frank.—p. 9.
Myxoma of Heart. D. R. Allison and W. Susman.—p. 11.
Plasma-Protein Levels in West Africans. M. R. Barakat and D. A. Smith.—p. 12.
Tonic Fits and Glycosuria Due to Fat-Embolism. C. A. Rumball.—p. 13.

**Ileostomy and Ulcerative Colitis.**—Hardy and associates point out that in the treatment of ulcerative colitis, apart from its complications, surgical intervention has one object, to put the colon at complete rest, and this can be done only by ileostomy. Since 1939 ileostomy has been performed 21 times in their hospital with 6 deaths. Two moribund patients were operated on as a measure of last resort and died shortly afterward. Three patients died from intestinal obstruction. One patient collapsed suddenly three weeks after ileostomy and died, probably as a result of sodium depletion. Of the last 9 patients only 1 has died. The authors make a plea for the more frequent use of ileostomy and for its earlier performance. The modern operation of double-ended ileostomy is described together with some improvements in technic. Careful selection of cases is important. Much of the dread of ileostomy has been overcome by the use of a new form of bag, introduced a few years ago in America and known there as the Koenig-Rutzen bag. The authors use a modification of this bag. It is attached to the skin by a latex fixative. Patients must be thoroughly prepared, psychologically and dietetically, and their sodium balance must be carefully maintained after operation. Ileostomy controlled by the new form of bag permits an early return to almost full activity.

**English Male Toads in Pregnancy Tests.**—Klopper and Frank state that Galli Mainini's work was repeated in Britain by Haines on imported specimens of Bufo arenarum. His results were so encouraging that a search for Old World toads suitable for the test was made. Good results were obtained with the common English toad, Bufo vulgaris. The authors present an analysis of the results they have obtained with these animals. The results were positive in 51 of 101 tests and negative in 50. The 51 positive reactions were all shown by the clinical outcome to have been obtained with urine from women who were pregnant at the time of the test. There were thus no false positive results. The negative results were as follows: Control series 14; patients ultimately proved nonpregnant 28, and false negatives 8. This shows a high incidence of false negatives as compared with the results published by Galli Mainini. The test has many advantages over present biologic tests.

## Medical Journal of Australia, Sydney

**1:761-796 (June 11) 1949. Partial Index**

Tuberculous Empyema. A. H. Penington.—p. 769.
Some Aspects of Fluid Therapy in Oto-Laryngology. A. O. Davy.—p. 771.
Some Aspects of Nutrition as Related to Practice of Obstetrics and Gynaecology. E. H. Hipsley.—p. 775.

## Practitioner, London

**162:437-532 (June) 1949. Partial Index**

Food Poisoning. E. T. Conybeare.—p. 437.
Bacteriology of Food Poisoning. G. S. Wilson.—p. 445.
Food Hygiene in Shops and Restaurants. R. Cruickshank.—p. 461.
Treatment of Food Poisoning. S. J. Hartfall.—p. 469.
Domestic Food Poisoning Problem. A. B. Stewart.—p. 477.
Headache. C. Symonds.—p. 481.
Present Status of Treatment of Thyrotoxicosis. W. H. Boierwaltes and C. C. Sturgis.—p. 486.
Early Recognition of Cancer of Rectum. S. O. Aylett.—p. 502.
Penicillin by Subcutaneous Route. D. Wheatley.—p. 508.

## South African Medical Journal, Cape Town

**23:391-414 (May 21) 1949. Partial Index**

*Herniation of Nucleus Pulposus in Lumbar Region. J. G. du Toit.—p. 391.
Malignant Disease: Present-Day Knowledge of Its Cause and Nature. J. F. Murray.—p. 395.
Id.: Endocrine and Nutritional Aspects. M. M. Susman.—p. 401.
Value of Skin Grafts in Surgery of Nose, Throat and Ear. A. J. de Villiers.—p. 409.

**Herniation of Nucleus Pulposus in Lumbar Region.**—Although some patients with lower back pain with or without sciatica are cured by the removal of nuclear protrusions, it is a mistake to advocate a laminectomy in every patient with sciatica and/or low backache. Excessive enthusiasm must inevitably lead to disillusionment. The unfavorable results in disk surgery reported by some surgeons are due to (1) failure to select patients carefully, and (2) lack of appreciation of the fact that the patient has a 20 per cent chance of having a double disk lesion and, consequently, that removing only one protrusion will not relieve him. Other points are inadequate removal of the pathologic nucleus pulposus with subsequent recurrence and, above all, failure to prescribe proper after-treatment; as long as the erector spinae muscles are weak and atonic the patient will complain of pain, tiredness and weakness of his back. Disk surgery has come to stay as an important advance in the surgical treatment of lower back pain and/or sciatica. A critical assessment of every patient and assiduous attention to detail in treatment and after-treatment are essential if good results are to be hoped for.

## Thorax, London

**4:73-124 (June) 1949**

Reserve Air as Aid in Diagnosis of Emphysema. H. Herxheimer.—p. 73.
*Excision of Lung for Pulmonary Tuberculosis. T. H. Sellors and M. D. Hickey.—p. 82.
Tuberculous Cavities in Apex of Lower Lobe. J. Crofton.—p. 96.
Sterile Serous Effusions in Cases of Lobar Pneumonia Treated with Sulphonamides. R. C. Nairn.—p. 101.
Fracture of Bronchus. J. L. Griffith.—p. 103.
Post-Operative Respiratory Complications: Study of 1,000 Genito-Urinary Cases. K. J. Mann.—p. 110.
Perforations Following Dilatation of Oesophageal Strictures: Report of 3 Cases with Recovery. C. A. Wells, J. H. Hughes, R. Edwards and R. Marcus.—p. 119.

**Excision of Lung in Pulmonary Tuberculosis.**—Sellors and Hickey review observations on 78 cases in which lobectomy or pneumonectomy was performed in the presence of pulmonary tuberculosis. Twenty-three of the resections were done without realization that tuberculous infection was present. Some of these cases date back ten years and more. Six of these patients died as a consequence of the operation. In 15 of the 23 cases the lobectomy had been done on the basis of a diagnosis of bronchiectasis, in the others tumor was suspected. Deliberate excision for a known tuberculous lesion was undertaken in 55 patients. Fifteen of these excisions were for tuberculoma, with satisfactory results and no fatalities. The remaining 40 resections, with 5 fatalities, were undertaken for pulmonary and bronchial lesions. The authors believe that the prime consideration before excision is undertaken in pulmonary tuberculosis is that other and simpler methods have been tried and have failed. The second is that the residual lung tissue should be free from active disease and able to stand the physiologic strain placed on it. It is practically impossible to make general rules regarding indications for lobectomy or pneumonectomy, since each case presents an individual problem in which anatomic, pathologic and constitutional factors must be considered. Persistent cavities, failures of thoracoplasty, bronchial stricture and "destroyed lung" are some of the indications discussed by the authors.

## Transactions Royal Soc. Trop. Med. and Hyg., London

**43**:511-630 (May) 1949. **Partial Index**

Epidemiology of Yellow Fever in Central Africa. A. F. Mahaffy.—p. 511.
Filaria in the Anglo-Egyptian Sudan. H. M. Woodman.—p. 543.
Incidence of Schistosomiasis in South Central Africa. M. Gelfand and W. F. Ross.—p. 559.
Observations on Treatment of Falciparum Malaria. R. H. Black.—p. 565.
Note on Presumed Exo-Erythrocytic Development of Plasmodium Vassali in Liver of the Malayan Squirrel. J. W. Field and J. F. B. Edeson.—p. 569.
Rate of Disappearance of Leishmania in Kala-Azar Patients Under Urea Stibamine Therapy. Eutrope A. Ho, Tsung-Hsiu Seong and Young Li.—p. 573.

## Anales de la Facultad de Ciencias Médicas, Asunción

**7**:5-70 (Dec.) 1948. **Partial Index**

*Epidemic Outbreak of Psittacosis in Paraguay. C. M. Ramirez Boettner, A. Canese, A. Adorno and R. Bustamante.—p. 13.

**Psittacosis in Paraguay.**—Boettner and collaborators describe an epidemic of psittacosis in Paraguay, with 15 cases and 2 deaths. Eight families bought twelve parrots, ten of which died shortly afterward with typical symptoms of psittacosis. The patients were in direct contact either with the parrots or with persons who had been in contact with them. All but 1 of the patients were adults. Ten were women. The course of the disease, which was either acute or subacute, and the respiratory symptoms were typical. The virus was identified in all cases. Of the 6 patients with complications of the nervous system 4 recovered and 2 died in coma. Sulfanilamide given to 5 patients was without effect. Four patients in whom sulfanilamide therapy failed were given penicillin. One patient was almost moribund. The other 3 were given 100,000 units of penicillin daily for two or three days. This therapy gave satisfactory results. In subacute cases the treatment consisted of administration of quinine and calcium gluconate. Good results were obtained.

## Fol. Psych. Neurol. et Neuroch. Neerlan., Amsterdam

**52**:95-182 (April) 1949. **Partial Index**

*Thallium Poisoning. J. J. G. Prick, L. Muller and W. G. Sillevis Smitt.—p. 95.
Syphilis of Central Nervous System in Java. W. J. C. Verhaart and G. A. van Wieringen-Rauws.—p. 115.
Medullary Syndromes Simulating Multiple Sclerosis, Amyotrophic Lateral Sclerosis, Subacute Combined Degeneration of Cord and Syringomyelia, Caused by Herniation of Intervertebral Cervical Disk. W. A. den Hartog Jager and D. Mollie.—p. 137.

**Thallium Poisoning.**—Prick and his associates review the various aspects of thallium poisoning and describe observations in 10 cases differentiated into three groups: first, acute cases terminating in death after seven to ten days; second, an acute stage that passing into a chronic stage, the clinical picture of which was milder and sometimes lasted six months or longer, during which time new symptoms manifested themselves, and third, a subacute form lasting from six weeks to three or four months. In the acute form the principal causes of death was respiratory paralysis, accompanied or not by purulent bronchitis or pneumonia, and circulatory disturbances. The prognosis for life became much more favorable if the patient survived the first phase. Loss of hair usually begins between the fourteenth and eighteenth day. Other symptoms include glabrous tongue, cheilosis at the corners of the mouth and brown pigmentation on the backs of the hands. This pigmentation was also seen in the inguinal folds, on the scrotum, and in 1 case over a large expanse of the body. There may be abnormal great toe reflexes, visual disturbances, hypertension, nephritis, pains and swelling in the joints and cerebral disturbances. The authors discuss the pathologic anatomy of thallium poisoning, cite experimental and clinical reports, and describe necropsies on their own patients. Washing out the stomach and the use of laxatives are important in acute cases. Injection of histamine, followed by renewed rinsing of the stomach and the use of diuretics, is also advisable. To render inactive any thallium which might already have begun circulating in the blood 10 cc. of a 10 per cent sodium thiosulfate solution should be administered intravenously. This can be repeated several times a day and should be continued over a period of time. The authors also saw good results from blood transfusions in cases of acute poisoning. Symptomatic measures may be advisable, also large doses of vitamin $B_1$ and $B_6$. Rat poison in the form of thallium sulfate is the chief source of thallium poisoning. Since this substance is colorless and tasteless, it may also be used with homicidal or suicidal intent and thus may be of importance in forensic medicine.

## Maandschrift voor Kindergeneeskunde, Leyden

**17**:1-82 (No. 1) 1949

Hypovitaminosis and Hypervitaminosis. A. van Westrienen.—p. 1.
*Chickenpox: Recurrent Attack and Corneoscleral Localization. G. M. H. Veeneklaas.—p. 18.
Werlhof's Disease and Extirpation of Spleen. T. Halbertsma.—p. 21.
Renal Rickets with Signs of Tetany. F. A. Willemijns and Meulemans.—p. 25.

**Chickenpox: Recurrent Attack and Corneoscleral Localization.**—Veeneklaas says that in January 1946 chickenpox occurred in a neighborhood where there resided a family with 3 children, aged 7 months, 2½ years and 5 years. The youngest child had a typical attack of chickenpox during the second half of January. The two older children had not had the disease and did not contract it at this time. During the first half of March the oldest and the youngest child came in contact with a patient, who the day after the contact showed typical symptoms of chickenpox. The youngest child was vaccinated on March 6, and on March 13 showed two pustules. On March 19 this child again exhibited the classic picture of chickenpox, but most of the crusts had disappeared by March 23. A new crop of chickenpox vesicles appeared on March 27 and again subsided rapidly. On March 25 the oldest child, aged 5 years, had a small ulcer on the inside of the upper lip and on the following day she exhibited an exanthem, fever, otitis media, diffuse conjunctivitis and two vesicles on the back. On March 27, the temperature decreased somewhat, and the exanthem and the conjunctivitis subsided. Paracentesis of the left tympanic membrane yielded pus. A number of vesicles were now visible over the entire body. On the limbus of the cornea, on the median side of the right eye, a vesicle formed and the temperature increased again. Pus discharged from the left ear, and hundreds of vesicles were now distributed over the entire body, including the eyelids. The blister on the cornea and sclera extended further. The chickenpox ran the usual course, but at the rim of the cornea a dull spot persisted and was still noticeable three years later. On April 9 the child aged 2½ contracted chickenpox, and in this instance also a vesicle developed on the limbus of the cornea of the right eye.

## Medizinische Klinik, Munich

**44**:689-720 (June 3) 1949. **Partial Index**

*Cutting of Thalamofrontal Tracts in Uncontrollable Pain. V. T. Riechert.—p. 689.
Myositis Ossificans Circumscripta Traumatica After Defective Treatment. V. H. Junge.—p. 692.
*Priapism. H. Haar—p. 696.
How to Treat Perthes' Disease. G. Exner.—p. 708.

**Cutting of Thalamofrontal Tracts in Uncontrollable Pain.**—The cutting of thalamofrontal tracts for intractable pain has been recently suggested by Freeman and Watts. Riechert so far has employed the procedure in 6 patients. The operation is of value also in types of pain which could not be influenced by surgical measures formerly in use for the control of pain. The author treated successfully 1 patient with anesthesia dolorosa and 2 patients with intractable pain from advanced syringomyelia. The type of pain presented by the patient with anesthesia dolorosa is seen frequently after electrocoagulation of the gasserian ganglion. Pain which was formerly piercing and intermittent often becomes burning, continuous and less bearable. To reduce to a minimum the undesirable effects of the cutting of the thalamofrontal tracts, the author performs the operation with the patient under local anesthesia and if possible during an attack of pain. The patient is urged to describe the effect of the operative procedure on the pain. In a patient with syringomyelia the pains were localized in the neck, shoulders and upper part of the arms. The tracts were severed first on the right side, and the patient stated that the pains on the left side had disappeared, whereas on the right side they became

more intense and extensive, involving also the hand. Cutting of the tracts on the left side gradually reduced the area of pain, which finally disappeared. The author has gained the impression on the basis of exploratory operations performed with the patient under local anesthesia, that the cutting of a comparatively small portion of the thalamofrontal tracts, chiefly those leading to the median basal orbital port of the brain, is most effective. He also observed that patients who before the operation had been addicted to drugs did not manifest withdrawal symptoms when the drugs were stopped after the operation. The time elapsed since operation is too short to enable the author to state whether the pain has been permanently abolished or may return.

**Priapism.**—Haar differentiates two forms of priapism: the purely neurofunctional priapism and that which results from disturbances in the local circulation. The first form is observed after irritation of the center of erection or of the nervous channels originating in this center, as in fractures and dislocations of the vertebral column involving compression of the spinal cord; in tuberculosis or tumors of the spinal cord; in tabes dorsalis, and occasionally in diseases of the central nervous system. Priapism of local origin is observed in cavernitis due to gonorrhea, or to phagedenic ulcer of the prepuce; in the presence of neoplasm of the penis, which have invaded the corpora cavernosa, and after trauma with hematoma in the corpora cavernosa. There is also priapism in leukemia, hemophilia, typhoid, tuberculosis, sepsis and acute articular rheumatism. Priapism is often accompanied with unbearable pain, which necessitates morphinization. It may become complicated by gangrene, infection and even sepsis. In the first of the 2 cases discussed by the author the etiologic basis was not clear. The history revealed damage to the lumbar spinal cord from a missile lodged there and later removed. However, it is difficult to explain why priapism did not develop until four years later. Capillaroscopy indicated a disturbance in the peripheral circulation, and this, together with the earlier damage to the lumbar spinal cord with irritation of the center of erection, blood stasis resulting during sleep and pressure from a full bladder on the venous plexus pudendalis, probably brought on the priapism. The second case concerned a youth of 17, who had sustained a fracture and dislocation in the cervical portion of the vertebral column with compression of the cervical spinal cord. As the result of the abolishment of the inhibiting influence of the vasomotor center in the medulla oblongata, which governs the center of erection, a permanent erection resulted; a sort of hyperreflexia seems to be the cause in this patient. Peridural anesthesia interrupted the priapism in this patient.

## Nordisk Medicin, Stockholm

**41:**843-886 (May 13) 1949. **Partial Index**

*Arteriovenous Aneurysms in Brain. H. Olivecrona.—p. 843.
*Penicillin Treatment in Early Congenital Syphilis Compared with Usual Earlier Treatment. L. E. Carlgren.—p. 846.
Streptomycin Treatment of Hemophilus Influenzae Meningitis. A. Kass.—p. 851.
Importance of Quantitative Tuberculin Test in Diagnosis of Tuberculosis in Children. S. Auttila.—p. 854.
Recrystallized Insulin in Allergy to Insulin. J. E. Jorpes.—p. 856.

**Arteriovenous Aneurysms in Brain.**—Olivecrona states that in patients with epileptic attacks, especially of the jacksonian type, and history of one or several subarachnoid hemorrhages, the diagnosis of arteriovenous aneurysm is practically certain. A systolic blowing sound is pathognomic but is a relatively rare symptom. Arteriovenous aneurysms may be suspected in other persons, particularly in subarachnoid and intracerebral hemorrhages in younger persons without hypertension. Arteriography is always indicated when arteriovenous aneurysm is suspected. In treatment the choice lies between removal of the aneurysm and leaving it alone. Experiences with ligature of the carotid artery were discouraging. The aneurysm was extirpated in 47 of the 79 patients treated in the Serafimer Hospital's neurosurgical division from 1923 to 1948, with operative mortality of 8.5 per cent. The aneurysm was removed from 24 of the 42 patients treated from 1936 and from 18 of the 19 treated from 1946 to 1948. Arteriovenous aneurysm may be inoperable because of its site, as in the case of most aneurysms in the posterior fissure and all located in the brain stem, or because of its size. Late results show that 8 of the 24 patients operated on from 1936 to 1946 are well, with full or almost full ability to work. Eight who had defects that in several cases were present before but in some instances were aggravated by operation are able to do limited work; the remaining 5 survivors are invalids. In epilepsy the prognosis is best in younger patients with short anamnesis, unfavorable in inveterate cases.

**Penicillin Treatment of Early Congenital Syphilis.**—Carlgren's material comprises 31 patients with early congenital syphilis observed from 1945 to 1947 and treated with penicillin, with 4 deaths, and 31 patients from 1934 to 1945 treated with arsenic and bismuth compounds, with 11 deaths. The two groups are comparable with regard to gravity of infection. The author finds that penicillin treatment is not only equal but in certain respects superior to the arsenic and bismuth treatment. In patients given penicillin the mortality was considerably lower. The clinical symptoms disappeared at least equally fast, the general condition seemed more rapidly to be influenced favorably, the side effects were fewer, seronegativity was attained in shorter time, and recurrence was less frequent. Penicillin is a valuable prophylactic agent against intercurrent infections. The penicillin dosage applied was as a rule lower than that ordinarily recommended. The results indicate that relatively low doses suffice. Although in many instances one series of penicillin injections seemed to be sufficient, continued treatment till seronegativity is attained is advised because of the uncertainty as to recurrence.

## 41:975-1018 (June 3) 1949. Partial Index

*Potassium Solutions: Indication and Lines of Guidance in Treatment of Intracellular Potassium Deficiency. O. J. Malm.—p. 975.
Normal Value of Serum Copper in Man. G. R. Wallgren.—p. 985.
*Tumors of Sweat Glands in Vulva. H. Brattström.—p. 987.
*Prostatectomy According to Millin. H. Ekman.—p. 990.
Facial Edema in Codeine Poisoning. M. Hertz.—p. 992.
Treatment of Gastric Ulcer with Gynergen. H. Oigaard.—p. 993.
Peritoneal Irrigation in Anuria. E. Bonge and H. Vetlingstad.—p. 995.
Bronchial Asthma Due to Chromium Trioxide. C. Broch.—p. 996.

**Potassium Solutions. Indications and Treatment of Intracellular Potassium Deficiency.**—Malm says that the theoretic basis for potassium therapy is the knowledge of the intracellular potassium deficiency which accompanies grave conditions of dehydration whether connected with acidosis, as in diarrheas and diabetic acidosis, or with alkalosis and pyloric stenosis. The indication for potassium treatment is severe dehydration. Infectious enteritis in which all fluids must be administered parenterally for several days and diabetic coma are important and indicative. In cases of familial periodic paralysis the low serum potassium level during the attacks can be relieved promptly by administration of potassium. There are also cases of chronic nephritis with low serum potassium levels and paralyses which should be treated with potassium. It is important to know that normal or increased serum potassium determinations may be seen in patients with grave potassium deficiency in the organism; the increased serum potassium can in such cases be considered as proceeding from the cells to the kidneys for elimination. With potassium deficiency in the cells, pronounced asthenia with muscular weakness, hypotonia of the skeletal musculature and signs of myocardial weakness are an indication for potassium administration by the mouth or parenterally according to Darrow. Darrow's potassium solutions are described, and detailed directions are given for oral and parenteral administration.

**Sweat Gland Tumors in Vulva.**—Brattström describes 10 cases of hidradenoma in the vulva, with histologic structure varying from intracystic papilloma to massive adenoma, 2 cases of hidradenocarcinoma and 1 case of sweat gland tumor of mixed type. A histogenetic classification of sweat gland tumors can hardly be made. In the 2 cases of malignant sweat gland tumors in the vulva the nature of the tumor was revealed by the histologic structure, and in the second case also by the occurrence of metastases. Because of the three year duration in this case it is thought that the tumor may have originated as a hidradenoma, but histologic examination failed to show

any remains of hidradenoma. The last case presented histologically all the characteristics of sweat gland tumors of so-called mixed type. Such tumors are regarded as epithelial, and the structures found in them are believed to be mainly a transformation product of the epithelial cells and their secretion and also of the connective tissue normally found in the gland.

**Prostatectomy According to Millin.**—Ekman states that retropubic prostatectomy was performed in 51 cases in the Sahlgren Hospital during the past year, with 4 deaths, 2 from pulmonary embolism. He considers Millin's operation particularly useful in patients with large adenomas but with uninfected urinary tract. In obese patients with a relatively small prostate the method may present difficulties; occasionally in such cases transvesical prostatectomy is performed. A number of complications occurred, including pubic osteitis in 3 instances, but Ekman believes that with greater experience both as to indication and operative technic improvement in the results will follow. With this method a larger number of patients with prostatic hypertrophy can be treated surgically than was possible formerly, and the postoperative course is more comfortable.

## Praxis, Bern

**38**:577-596 (June 30) 1949

*Surgical Treatment of Paralysis of Facial Nerve. H. Koechlin.—p. 577.
Failures in Myelography. R. H. von Muralt.—p. 587.

**Surgical Treatment of Facial Paralysis.**—According to Koechlin, in cases of recent paralysis of the facial nerve one should always attempt end to end suturing. If this is not feasible one may use nerve grafts taken from the cutaneous femoris lateralis nerve. In cases of long duration or in cases of intracranial or inaccessible lesions the majority of surgeons refrain from nerve anastomoses because of disappointing results. Superior cervical ganglionectomy may be attempted occasionally for ocular disturbances in certain cases. The occlusion of the eyelids may be improved by the production of Horner's syndrome. Autoplasty using strips of fascia lata is the method of choice. In some cases there may be considerable excess skin due to the distention of the aponeurotic tissues; this excess skin should be excised. In addition a myoplasty may be performed in an occasional instance, but the author does not consider the last-mentioned procedure as essential. Myoplasty alone proved insufficient, particularly in cases of long duration.

## Presse Médicale, Paris

**57**:535-566 (June 15) 1949. **Partial Index**

Radiologic Anatomy and Interpretation of Angiocardiography. F. Donzelot, R. Heim de Balsac, A. M. Emam-Zade and J. E. Escalle.—p. 535.
Streptomycin Associated with Pneumothorax in Early Treatment of Fibrocaseous Pulmonary Tuberculosis in Adults. C. Mattei, M. Tristani, P. Baboret and C. Mattei.—p. 537.
*Causes of Failure of Adrenalectomy and of Ganglionectomy in Thromboangiitis, Based on 898 Surgically Treated Patients. R. Leriche.—p. 539.

**Adrenalectomy and Ganglionectomy in Thromboangiitis.**—Leriche performed 800 ganglionectomies with or without splanchnicectomy, and 98 adrenalectomies for thromboangiitis since 1925. Highly satisfactory results may be obtained with bilateral ganglionectomy alone or adrenalectomy alone or with bilateral ganglionectomy combined with adrenalectomy on one side and splanchnicectomy on the other. Three causes may vitiate the result of ganglionectomy and of adrenalectomy, whether employed as a single or a combined operation. The presence of infected ulcers at the anterior part of the foot, of a large necrotic plaque at the dorsum of the foot from ischemic infarction, or of infarctoid nummular plaques at the heel should be treated before or at the end of the vasodilating intervention. Mechanical cleansing will prevent failure of the vasodilating operation. Failure of the reutilization of the main vessel and of its permeability below the thrombosis at a distance from the first appearance of the obliteration may be another cause of failure of the operation, but one for which there is no remedy. Arteriography is a reliable means of determining in advance the functional prognosis of the vasodilating operations by demonstrating the seat and the physiologic consequences of the thromboangiitis. Occasionally there may be a third cause of failure, i. e., simultaneous arterial and venous thrombosis. In cases of this type nothing will prevent the occurrence of gangrene. The only objective of ganglionectomy then may be to limit the gangrene by suppressing the vasoconstrictor phenomena at the border of the dead tissues.

## Revista Clínica Española, Madrid

**32**:373-432 (March 31) 1949. **Partial Index**

*Paradoxes in Clinical and Pathogenetic Problems of Jaundice. C. Jiménez Díaz, H. Castro Mendoza and E. Domínguez Domínguez-Adame.—p. 385.

**Pathogenesis of Jaundice.**—Jiménez Díaz and collaborators found that cholemia in normal persons consists of both the direct and indirect fractions of bilirubin. In 3 per cent of the cases studied by them normal cholemia consisted only of the direct fraction. Bilirubin is never encountered in normal urine, in the urine of patients with direct hypercholemia, in hemolytic acholuric jaundice, and in the urine of patients with nephritis. The indirect fraction of bilirubin is present in the urine of patients with choluric jaundice. Direct cholemia is high in patients with acute atrophy of the liver, regardless of the acuteness of parenchymal destruction. Acute hepatitis may proceed to fatal termination without jaundice. The authors found at necropsy on patients with acute atrophy of the liver with and without jaundice that jaundice was related to the presence of both edema of the liver and nodules of regeneration about the portal spaces. They conclude that the transformation of the indirect fraction of bilirubin into the direct fraction is performed by the kidney and not by the liver, as has been previously believed. The main causal factors of jaundice are edema of the liver and obstruction of the biliary capillaries from compression of nodules.

## Revista Médica de Rosario

**39**:1-38 (Jan.) 1949. **Partial Index**

Considerations About Continuous Spinal Anesthesia. A. E. Favalli.—p. 3.
*Hematologic Study of Patients with Leprosy After Treatment with Diasone. J. M. M. Fernández, P. Tommasino, E. A. Carboni and M. M. Giménez.—p. 10.

**Hematologic Studies in Leprosy.**—Diasone® (disodium formaldehyde sulfoxylate diaminodiphenylsulfone) given largely in the treatment of leprosy sometimes acts as a hemolytic poison. The resulting anemia usually is mild, does not make it necessary to interrupt the treatment and responds to iron, liver and vitamins of the B complex.

## Revista Médica de Valparaiso

**3**:63-132 (May) 1949. **Partial Index**

*Scheme for Intensive Six Day Treatment of Recently Acquired Syphilis. H. Vicuña M. and A. Lopez M. C.—p. 63.
Considerations About Symptomatology of Acute Vascular Accidents of Encephalon. A. Robinson N.—p. 90.
Radiologic Studies of Rheumatoid Arthritis. E. Zarate V., W. E. Koch and H. Arellano C.—p. 110.

**Treatment of Recently Acquired Syphilis.**—The results of intensive treatment in 200 cases of recent syphilis are given. The treatment consisted of 0.36 to 0.48 Gm. of arsenoxide, 2.40 Gm. of bismuth, 600,000 units of penicillin and three pyretogenic injections in six days. The only serious accidents were 2 cases of arsenical encephalopathy, 1 patient died and the other recovered. The effect on the lesions and on the serologic reaction and on the evidence of reinfection demonstrated favorable results in more than 90 per cent of the treated patients.

## Rivista di Malariologia, Rome

**38**:61-124 (April) 1949. **Partial Index**

*Anatomicopathologic Aspects of Acute Experimental Poisoning with DDT: Especially on the Nervous System. R. Virgili and G. Marchiafava.—p. 107.

**Experimental Poisoning with DDT.**—Virgili and Marchiafava established in experiments on guinea pigs, rabbits and cats that the central nervous system is greatly damaged by DDT poisoning. The lesions are those of chromatolysis, vacuolization, pyknotic changes, cellular destruction, neuronophagia, changes in the neuroglia, the cerebellum and the cortex and damage to the cells of the anterior horns. The pontobulbar region is the most seriously damaged. The severity and dis-

tribution of the changes in the central nervous system explain the acute neurologic symptoms which are commonly observed in animals poisoned with DDT, as well as the respiratory paralysis which is the usual cause of death from this poison.

## Rivista di Neurologia, Bologna

**19**:1-144 (Jan.-Feb.) 1949. **Partial Index**

*Postvaccinal Encephalomyelitis in Adults: Nosographic Position as Demyelinating Disease. S. Rigotti.—p. 1.

**Postvaccinal Encephalomyelitis.**—In 1945, when smallpox vaccination of adults was obligatory in the Province of Padua, Rigotti observed 2 cases of postvaccinal encephalomyelitis. The neurologic symptoms in adults differ from those in children. From an extensive review of the literature and from his own observations he concludes that smallpox postvaccinal encephalomyelitis in adults is diffusely disseminated in the brain and in the spinal cord. The disease follows a chronic course similar to that of multiple sclerosis. The disease is a demyelinating dysergia of the nervous system. In the establishment of dysergia of the nervous system, the age of the patient is a factor of importance. The most important dysergic nervous factor, however, is the effect of a previously administered smallpox vaccine.

## Schweizerische medizinische Wochenschrift, Basel

**79**:533-564 (June 18) 1949. **Partial Index**

*Our Experiences with Operative Treatment of Carcinoma of Bronchi. A. Brunner.—p. 533.
Operative Treatment of Carcinoma of the Esophagus. P. Decker.—p. 535.
Treatment of Cancer of the Breast. A. Jentzer and R. Clerc.—p. 537.
Beginnings of Chemotherapy for Neoplastic Diseases. L. Heilmeyer. —p. 539.
*Multiple Possibilities of Application of Long-Living Artificial Radioactive Isotopes ($Co^{60}$) in Liquid Form for Irradiation Therapy of Malignant Tumors. J. H. Müller.—p. 547.

**Bronchial Carcinoma.**—Brunner operated on 26 patients with carcinoma of the bronchi. Pneumonectomy was performed on 22 with 4 operative deaths and lobectomy in 4 with 1 operative death. The mortality rate of 19 per cent seems moderate in view of the liberal indications to give the patient a last chance. Four patients were over 60 years of age, and the oldest was 68. Six of the 21 surviving patients died from recurrence or metastasis. The first 2 patients on whom pneumonectomy was performed in 1946 were in good health at the time of writing. The author agrees with American and English workers that the operative prognosis is not bad in patients who do not present metastasis in their lymph nodes. Exploratory thoracotomy should be practiced as little as possible, since ineffective intervention may shake the confidence in surgical treatment. Bronchoscopy will fail in peripheral tumors the incidence of which is relatively high. Early diagnosis of tumors of this type may be facilitated by bronchographic examination aided by a water-soluble contrast medium.

**Long-Living Artificial Radioactive Isotopes as a Means of Irradiation Therapy.**—Müller presents a preliminary report on a new technic which utilizes long-living artificial radioactive isotopes for irradiation therapy. Radiocobalt ($Co^{60}$), the half-life of which is 5.3 years, has been employed in liquid form in a radiocobalt chlorine solution. Sodium iodide has been added as a contrast medium. The radioactive solutions are measured by means of an ionization chamber in order to determine the effective radium-equivalence. The spacial distribution of gamma radiation was determined with radioautographs. The clinical application of the radiocobalt solution is performed by means of suitable rubber balloons. This procedure may be employed safely because $Co^{60}$, in contrast to radium, does not emanate. $Co^{60}$ actually emits a practically monochromatic gamma radiation of high, medium energy and only a soft beta radiation; the latter is readily absorbed by thinnest material layers. An empty rubber balloon mounted on a permanent catheter may be introduced without difficulty into the urinary bladder and may then be filled "in situ" with 60 cc. of the radiocobalt solution. After the administration of the appropriate irradiation dose the balloon can be evacuated and removed easily by the urethral route. This filling method seems definitely promising for increasing substantially the radiotherapeutic possibilities in grave cases of cancer of the bladder and of the prostate. The same method may be suitable for all areas of the body, especially cavities which are accessible through relatively narrow natural or artificially produced passages.

## Schweizerische Zeitschrift für Tuberkulose, Basel

**6**:137-208 (Nr. 3) 1949. **Partial Index**

*Pyelitis Caseosa, an Early Form of Exudative Renal Tuberculosis. H. U. Gloor and E. Uehlinger.—p. 137.
Oleothorax as an Extrapleural Surgical Collapse Therapy. R. Wipf. —p. 167.
Inverse Movement of Level of Liquid in Hydropneumothorax as Sign of Adhesions at Base of Lung. G. Rossel and J. J. Berthet.—p. 181.
Tomography in Tuberculous Spondylitis. E. Sommer.—p. 189.

**Pyelitis Caseosa an Early Form of Exudative Tuberculosis.**—Gloor and Uehlinger say that although pyelitis caseosa is not frequent, it deserves special attention, because from the clinical as well as from the prognostic point of view it is a strictly defined manifestation of urogenital tuberculosis. They present the histories of 5 patients with this lesion. The first case was that of a soldier aged 25 who had a primary pulmonary tuberculous infection. Four months later there was hematogenous dissemination. The patient died following an intercurrent attack of appendicitis two and one-half years after the primary infection. Necropsy revealed a late primary infection with hematogenous dissemination in the pulmonary apexes, pleura, peritoneum and urinary system. All these foci were of the same age. The clinical record indicated only a single hematogenous dissemination about four months after the primary infection. Thus the age of the hematogenous metastases, inclusive of the pyelitis caseosa, is slightly over two years. Pyelitis caseosa is a form of renal tuberculosis characterized by uniform caseation of the mucous membranes of the pelvis of one or both kidneys, without massive destruction of the renal parenchyma. In the same manner the mucous membranes of the ureters, the bladder and the seminal vesicles may undergo massive necrosis. Pathogenetically, pyelitis caseosa belongs to the group of early hematogenous metastases in late primary tuberculous infection. Biologically it belongs to the Arthus phenomenon. The prognosis is grave. Streptomycin therapy is indicated, but operation must be deferred until after stabilization of the tuberculous infection.

## Semana Médica, Buenos Aires

**56**:669-712 (May 19) 1949. **Partial Index**

*Essential Hypertension and the Bilateral Renal Decapsulation. C. F. Cárrega Casaffousth and J. S. Cattaneo.—p. 669.
Contribution to the Biologic Treatment of Diabetes: Blood-Sugar-Lowering Action of Penicillin. L. G. Gret.—p. 677.
Hormonal Local Stimulation of Vaginal Mucous Membrane. C. A. Colotta.—p. 689.

**Hypertension and Renal Decapsulation.**—Bilateral renal decapsultation in 4 cases of essential hypertension produced permanent normalization of the blood pressure and disappearance of the subjective symptoms in 3 cases. Temporary normalization of the blood pressure and permanent relief from the subjective symptoms occurred in 1 case.

## Ugeskrift for Laeger, Copenhagen

**111**:521-546 (May 12) 1949

*Laboratory Diagnosis of Virus Diseases. M. Volkert.—p. 521.
Eye Diseases in Greenland (Thule, Upernavik and Kutdligssat). E. Skeller.—p. 529.

**Laboratory Diagnosis of Virus Diseases.**—Volkert states that virus diseases in which the laboratory can aid the clinic in exact diagnosis are infections of the respiratory tract, infections of the central nervous system, virus diseases with cutaneous manifestations and virus diseases in other organs. He stresses that isolation and cultivation of a virus require considerable time, often weeks, and that specific antibodies in the patient's blood do not appear in demonstrable amounts till late in the disease. Therefore the diagnosis will in most cases be retrospective and of only limited value in the treatment of the individual patient. In the most important virus diseases known to occur in Denmark, namely influenza A, influenza B, psittacosis, primary atypical pneumonia, parotitis and venereal lymphogranuloma, serologic diagnosis is a routine procedure in the State Serum Institute.

# Book Notices

**George R. Minot Symposium on Hematology.** William Damesheh, M.D., and F. H. L. Taylor, Ph.D., editors. [Reprinted from Blood, the Journal of Hematology.] Cloth. Price, $12. Pp. 984, with illustrations. Grune & Stratton, Inc., 381 4th Ave., New York 16, 1949.

This book is a "Festshrift" published in honor of Dr. George Richards Minot. Papers presented were written for the most part by his colleagues, co-workers and former associates. Several of the manuscripts have been translated from foreign languages. The eighty odd articles presented have been already published in the regular issues of *Blood* from January 1948 through February 1949. Articles have been assembled, as far as possible, in groups of related subjects, beginning with pernicious anemia, the investigation and treatment of which brought Dr. Minot world renown. The collected articles of this symposium offer a wealth of information to all medical men with a distinct interest in hematology, and the volume is a "must" for all hematologists.

**The Adrenal Gland.** By Frank A. Hartman, Ph.D., Research Professor of Physiology, the Ohio State University, and Katharine A. Brownell, Ph.D., Instructor in Physiology, the Ohio State University, Columbus, Ohio. Cloth. Price, $12. Pp. 581, with 72 illustrations. Lea & Febiger, 600 S. Washington Sq., Philadelphia 6, 1949.

The book by Hartman, who has devoted more than thirty years of research to the study of the adrenals, and of his collaborator, Brownell, is the most complete monograph on the adrenal gland today. It deals equally well with the anatomic (including the comparative anatomy), pharmacologic (including methods of assay), clinical, and particularly physiologic aspects of the problem. The style is clear and simple; the general arrangement is logical, and each chapter is followed by a precise summary. The book is provided with an index of about 3,500 authors and an equally extensive subject index. The authors do not emphasize their own opinion but report objectively. The book is unquestionably one of the most valuable additions to physiologic and clinical literature. The work is dedicated to the memory of W. B. Cannon and is worthy of it. Printing and binding are excellent.

**The Lattice Window.** By Frederic R. Stearns. Cloth. Price, $4. Pp. 236. The Dunne Press, 909 Baxter Ave., Louisville, Ky., 1949.

This novel portrays a period of history in a small town in Belgium during which the foundation and decay of a medieval university takes place. A psychiatrist, scion of an old Belgian family, converts the university into a mental hospital. The attitudes of the psychiatrist toward mental diseases are demonstrated to contain elements of a degenerative nature ascribed to decendants of old families. Environmental traditions, the acute hostilities of the townspeople and interreactions of the insane population of the hospital is vividly represented. The psychiatrist himself, unable to withstand the impact of the total problem, subsequently becomes insane.

The novel primarily features the timelessness of the problem of mental disease as it has permeated human cultural history through the ages. It is enjoyable, though not easy reading, and does not offer pat solutions.

**Problems of Early Infancy.** Edited by Milton J. E. Senn, M.D., Departments of Pediatrics and Psychiatry, Yale University School of Medicine, New Haven, Conn. Transactions of the Second Conference March 1-2, 1948, New York, N. Y. With Supplement Covering Special Meeting, July 18-19, 1947, New York, N. Y. Paper. Price, $1. Pp. 120, with illustrations. Josiah Macy, Jr., Foundation, 565 Park Ave., New York 21, [n.d.].

The conference reported in this monograph was sponsored and conducted by the Josiah Macy Jr. Foundation, which offers an opportunity for a group of approximately twenty-five investigators, representing, in so far as possible, all the branches of science which bear on a chosen medical or health problem to meet for a series of two day conferences. At this meeting the following papers were presented:

"An Introduction to the Discussion of the Psychological Problems of Pregnancy," by Helene Deutsch; "Summary Abstract of Three Publications by L. W. Sontag," by Sibylle Escalona; "Emotional Factors in Early Pregnancy," by John Parks; "Emotion in Pregnancy and Labor as Related to Natural Childbirth," by Frederick W. Goodrich; "Mental State of Women in Pregnancy and How That State Affects the Child in a Psychosomatic Sense," by Blackwell Sawyer; "Clinical Experiences and Observations on the Use of Relaxation Methods in Obstetrical Practice," by Albert M. Vollmer; "Fear, an Important Factor in Obstetrical Problems," by Howard Walser; "Some Clinical Observations on the Influence of Emotions in Pregnancy," by Howard Walser; "Myelinization of the Central Nervous System in Relation to Function," by Margaret A. Kennard; "A Memorandum on Emotional Disorganization in This Culture," by James Clark Moloney, and "Modern Nurseries New Designs," by Preston A. McLendon.

The monograph also contains a supplement of the special meeting held July 18-19, 1947. At this meeting, the following papers were read: "Troubles with Children in Wartime," by Ernst Freudenberg; "The Influence of War Conditions upon Emotional Behavior and Psychosomatic Symptoms in Children as Observed in Holland," by S. Van Creveld; "Postwar Neurotic Conditions of the Children of France," by Serge Lebovici; "Pediatrics for All," by Sture Siwe, and "My Impressions of a Trip Abroad," by David Levy.

Since everyone who read a paper at these two conferences is an authority in his or her field, it is easy to understand why this small book contains a good deal of worth while data. The book should be read by pediatricians, obstetricians, psychiatrists, psychologists and all others who are interested in human development and the welfare of women and children.

**Introduction to Radiochemistry.** By Gerhart Friedlander, Chemist, Brookhaven National Laboratory, Upton, Long Island, N. Y., and Joseph W. Kennedy, Professor of Chemistry, Washington University, St. Louis, Mo. Cloth. Price, $5. Pp. 412, with illustrations. John Wiley & Sons, Inc., 440 4th Ave., New York 16; Chapman & Hall, Ltd., 37-39 Essex St., Strand, London, W.C.2, 1949.

This book is a teaching text for chemists. Considerable background in chemistry, calculus and newtonian and relativistic physics is necessary to appreciate fully the scope of this volume. Nevertheless, the authors have written the text in a lucid style that enables one with only a nodding acquaintance with higher mathematics to appreciate the principles set forth.

Throughout the book the historical approach is used to introduce a subject. This lends interest to the discussion and ties the new material to the basic knowledge of the student. The subject of radiochemistry is introduced with a discussion of the three principal naturally occurring radioactive series of substances. A discussion of atomic and nuclear structure is followed by an excellent treatment of nuclear reactions. Sources of bombarding particles, such as alpha particles, electrons, neutrons and gamma radiations and their properties are discussed.

The quantitative treatment of nuclear reactions receives attention, and it is here that a thorough knowledge of differential equations is necessary for complete understanding of the subject.

In the discussion of the interaction of radiation with matter, the basic principles are presented but not the biological applications other than mention of the systems of measurement applicable to biologic material. However, the student, after having grasped these principles, can easily make his own applications.

Instrumentation is thoroughly discussed, as are the technics for measurement and study of radiations. Interesting are the many applications of statistical technics to the study of radiochemistry and nuclear reactions. The statistical notation used may be somewhat unfamiliar to those accustomed to biologic statistics.

Tracer technics are discussed briefly in the last chapter, but, as the authors point out in the preface, this volume is intended to provide a proper background for those interested in tracer work, and this subject is not within the scope of the book.

The giving of definitions as each new concept is introduced is a valuable pedagogic tool employed effectively by the authors. The inclusion of problems and exercises at the end of each chapter is also helpful to the student.

This book can be recommended as a textbook for senior or graduate students in chemistry but is too advanced for most medical students unless their premedical education included more chemistry, physics and mathematics than is usual in the crowded curriculum.

**Rapid Microchemical Methods for Blood and C S F Examinations.** By F. Rappaport, Ph.D., Laboratory Director of the Biochemical and Serological Department of the Bellinson Hospital, Petach Tiqva, Israel. With a Foreword by F. Silberstein, M.D. Cloth. Price, $8.75. Pp. 404, with 72 illustrations. Grune & Stratton, Inc., 381 4th Ave., New York 16, 1949.

The author's book, "Mikrochemie des Blutes," published in Vienna in 1935, was entirely sold out in two years. This new book has been produced from the experience gained from the earlier work. Additional methods largely developed by the author are now included, and with a change to a different language this is not in any sense a second edition. There are thirteen chapters and an appendix. The subjects covered are determinations of the general and physical qualities of blood; blood gas analysis; determinations of anions, kations, nonprotein nitrogen and its fractions, proteins and protein fractions, carbohydrates and their derivatives, ketobodies and polyvalent alcohols, fats and lipids, bile pigments and tests of hepatic function, enzymes, vitamins, sulfonamide drugs, para-aminobenzoic acid and thiocyanate. The appendix deals with solutions and apparatus. The brief chapter on vitamins deals with a method for determination of ascorbic acid, and the balance of the chapter is on prothrombin determination. Micromethods are not for the most part simple, nor are they adapted to the small office laboratory. They are useful in pediatrics or in a practice where repeated examinations make it desirable not to withdraw large quantities of blood by venipuncture. However, extreme care in technic is the first requisite in such procedures. The author has illustrated by clear line drawings interesting pipets, burets and other pieces of apparatus to be used in his micromethods. As a work of reference, this book will find a place in the library of the clinical pathologist. In time some of the author's methods may become standard.

**Standing and Sitting Posture with Special Reference to the Construction of Chairs.** By Bengt Åkerblom. Translated by Ann Synge. Paper. Pp. 187, with 81 illustrations. A.-B. Nordiska Bokhandeln, Stockholm, 1948.

Chapter 1 is largely devoted to the history of research and opinions on those parts of the skeletal system which are involved in the upright position. Chapter 2 relates to the sitting posture and chairs. The principal discussion is concerned with the importance of the height of the chair bottom from the floor in order that there will not be undue pressure on the thigh muscles which may result in fatigue. It also considers the slope of the bottom and the position of the back rest, which is applied to the weakest part of the spine. Chapter 3 is concerned with the function of the ligaments which limit forward flexion instead of the muscles. One wonders about the part that the fascial structures of the spine play in forward limitations.

In chapter 7 there is an experiment showing the relation of the feet to the standing posture. On page 94, in the last line of the fifth paragraph, is stated: "As the experimental subjects wore shoes in everyday life it seemed most suitable to me that the shoes should be on during the tests. For the sake of uniformity only low-heeled shoes were allowed." This experiment would be worthless to those who have high arches and loss of passive dorsal flexion, since these persons pronate with no or low heels. There is, however, a great deal of interest in this little volume and should stimulate further investigation. It is, of course, not possible to design a single model chair for all occupations and pleasures. The author states a well known fact, that change of position is restful.

**Medical Latin.** By Carolyn Lewis. Cloth. Price, $2. Pp. 135. Marshall Jones Company, Francestown, N. H., 1948.

This syllabus was organized for prospective students of medicine who find academic Latin a stumbling block instead of the stepping stone it could be if a review course simplified to certain fundamentals were available. Only that portion of Latin grammar essential to interpretation of terms which premedical students and nurses will meet in lectures, textbooks and laboratory work is presented. Several Greek roots, prefixes and suffixes are also included, with their meanings and use illustrated. The volume should be most useful to student nurses and medical students who desire a quick review of pertinent Latin grammar as an aid in medical studies.

**The Fundamentals of Pulmonary Tuberculosis and Its Complications for the Student, the Teacher, and the Practising Physician.** Editor: Edward W. Hayes, M.D. Editorial Committee: Andrew L. Banyai, M.D., Herman Hilleboe, M.D., J. Arthur Myers, M.D., and J. Winthrop Peabody, M.D. Sponsored by the American College of Chest Physicians. Cloth. Price, $9.50. Pp. 480, with 79 illustrations. Charles C Thomas, Publisher, 301-327 E. Lawrence Ave., Springfield, Ill.; Basil Blackwell & Mott, Ltd., 49 Broad St., Oxford, England; The Ryerson Press, 299 Queen St...W., Toronto 2B, Canada, 1949.

This book consists of twenty-six chapters prepared by twenty-seven physicians. It is characterized by the omission of theoretical and controversial material. Thus, it is a clear and concise statement of well established facts concerning the cause, diagnosis, treatment and prevention of tuberculosis. The disease is presented from the time tubercle bacilli first invade the human body through the earliest detectable pathologic processes and through the various stages of evolution until the body dies from tuberculosis or its complications. The chapter on bacteriology and pathology clearly and concisely presents the various stages in the development of the disease. It is profusely illustrated with microscopic sections, gross specimens and roentgen shadows which they cast. In 40 pages the student and practitioner find all of the essential and practical information necessary on the pathology of tuberculosis. In a chapter entitled, "The Role of the Bronchial Tree in the Pathogenesis of Pulmonary Tuberculosis," such subjects as physical obstruction, developmental anomalies, localization of lesions, drainage mechanism, emphysema and atelectasis are presented. The body's defense mechanism is discussed in considerable detail with reference to its ability to control tubercle bacilli over long periods, often throughout the normal span of life. Various methods of aiding the defense mechanism are presented.

The importance of diagnosing tuberculosis as soon as possible after tubercle bacilli invade the tissues is emphasized. For this it is emphasized that the tuberculin test is the only valuable diagnostic technic. When gross lesions develop, roentgenologic, bronchoscopic, bacteriologic and other studies are given their proper place.

The chapter on the diagnosis of the reinfection type of the disease, as well as the one on differential diagnosis, contains all the information that the physician needs to determine accurately the presence or absence of tuberculosis. Twenty-two nontuberculous pulmonary diseases are described, with methods of differentiation from pulmonary tuberculosis. The importance of accuracy in diagnosis receives the emphasis it deserves. An excellent chapter is devoted to the classification of the reinfection type of pulmonary tuberculosis. Questions which so frequently confuse students and physicians are answered in less than 20 pages.

Treatment of the reinfection type of pulmonary tuberculosis is presented in chapters on general, antibacterial and collapse therapy in all their aspects. An excellent chapter is included on psychosomatic aspects of tuberculosis, a subject which has been so often overlooked in the treatment of this disease. The commoner extrathoracic tubercular complications with diagnosis and treatment are presented in excellent chapters on tuberculous enterocolitis and tuberculosis of the genitourinary system, and one chapter is devoted to other complications, including peritonitis, tuberculosis of the bones and joints, the skin and the eye. In other chapters tuberculosis of the larynx, trachea and bronchi are well presented.

The relationship of tuberculosis and silicosis occupies a chapter, with a modern viewpoint which renders obsolete much that was formerly taught. One chapter is devoted to tuberculosis and diabetes, another to pregnancy and tuberculosis. The management of persons with these conditions is presented so as to include the most modern and effective measures. Public health aspects of the control of tuberculosis are well outlined and described. The last chapter is devoted to the prognosis of tuberculosis, in which the important factors are enumerated and discussed.

A list of approximately a hundred books on the various phases of pulmonary tuberculosis and other chronic diseases of the lungs is recommended as supplementary reading material. An excellent index is included.

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The format is ideal. The size of type, clarity of illustrations and quality of paper reflect the careful attention the publisher gave to the production of this volume. This book of 480 pages with 182 illustrations can be highly recommended to all senior medical students, teachers and practicing physicians.

**The Physique of Young Adult Males.** By W. J. Martin. Medical Research Council Memorandum No. 20. Paper. Price, 1s.3d. Pp. 66. His Majesty's Stationery Office, York House, Kingsway, London, W.C.2, 1949.

A statistical analysis of material from the records of the medical examinations given prior to the outbreak of war to the approximately 91,000 young men between the ages of 20 and 21 who were resident in Great Britain is made available in this report. Dr. Martin has analyzed the height, weight, chest circumference, medical grade and visual data furnished by those records and has made comparisons between those residing in urban and rural areas and also among those residing in fifteen different regions of the country.

Mean values, standard deviations and distribution tables are provided to illustrate the material which those examinations yielded. Mean heights, weights and chest circumferences are given for the whole country, for rural, county and urban districts and for each of the fifteen districts into which the country was divided. The results of visual examinations and the medical grade to which each man was assigned was similarly treated.

It is stated that the material "has been displayed so as to illuminate, whenever justifiable, questions of broad social interest and, in view of the pessimism excited by a report of the Ministry of National Service after the first world war, it should be said at once that the conclusions to be drawn from the present, while wholly unsensational, are within their limits encouraging." The limitations of the data are obvious and are readily admitted by the author. There is no analysis of the disabilities which placed the men in categories which disqualified them: it would seem that an assessment of the nation's health would be better based on such material than on height, weight and visual data.

This report will be of value to those interested in the values of these measurements, the visual findings and the medical grading of a large number of young men. The tables are well presented and obviously carefully prepared.

**The Organism: A Holistic Approach to Biology Derived from Pathological Data in Man.** By Kurt Goldstein, M.D., Columbia University, New York. [Reprint.] With a foreword by K. S. Lashley, Harvard University, Boston. American Psychology Series. Henry E. Garrett, general editor. Cloth. Price, $5. Pp. 533. American Book Company, 88 Lexington Ave., New York 16, 1939.

This volume is primarily addressed to the student of biologic sciences who is familiar with the technicalities of problems centering around the attainment of an adequate understanding of total organismic behavior. The book is a translation of the German original with minor changes and a sharpening of the focus on fundamental problems and principles. The method of approach reverses previous attempts at understanding higher organisms by examination of lower organisms. Man is made the point of departure in this study. This approach is based on the stated questionable validity of the "concept of simplicity." The author states that often the so-called simpler biologic performances are found to be abstractions and that the so-called simple can be as obscure as the complex. Pathologic data rather than normal physiologic phenomena are interpreted.

Discussions include clarifications of reflex functioning, instinctual drives, the conscious and the unconscious and concepts of heredity and breeding. Chapters on preferred behavior and Gestalt psychology, with reference to good and bad Gestalten, are intriguing.

Perhaps a possible fault of this treatise is the author's attempt to provide understanding of all organismic processes by intellectualization of objective facts. It denies psychologic law equal validity with biologic law and thus appears, in part at least, to deny holistic concepts. Nevertheless, the material presented is extremely thought provoking and of importance to all branches of natural science concerned with the integration of vital functions.

**Heilung durch Hypnose.** Von Dr. Lothar Prenscher. Paper. Price, $1.20. Pp. 45. Wilhelm Maudrich, Spitalgasse 1B, Vienna IX, 1949.

The author writes in a clinical rather than theoretical vein, maintaining that the value of hypnotic therapy is generally underestimated; that with the aid of sedatives it can be applied to 90 per cent of subjects; that the field of psychiatry yields relatively unfavorable results, because mental diseases are firmly anchored in the brain, but that useful results can be secured as a rule in the chronic noninfectious as well as in the functional diseases which comprise much of the medical practice. He outlines the methods which he employs, making no claim for novelty, and indicates what he believes could be their use in diseases of various systems and organs. In all instances, he adds, psychotherapy must be added to hypnosis if the patient is to achieve a real adjustment to his environment.

"The working of hypnosis," he states, "naturally derives from the central nervous system and therefore a sound central nervous system is prerequisite. Accordingly it is not remarkable that hypnosis practically always fails if this system itself is diseased or abnormal" (p. 23). Hysteria and neurasthenia he sees as exceptions to this rule.

The exposition is brief and generally lacking in statistical presentations and case histories. Consequently, the clinical results secured by the author cannot be appraised.

Apparently he is unfamiliar with certain recent experimental studies which have sharpened our concepts of hypnosis. Perhaps the weakest portions of his monograph are his attempts to formulate a working view of hypnosis. He mentions psychoanalysis several times, but exhibits little evidence of deep-seated freudian influence. Briefly stated, he considers almost all the influences which physicians exert on their patients, aside from medicines, surgery and other objective agencies, as suggestion. In this crude concept, he shows little evidence of basic training in experimental psychology.

Again, when he distinguishes between the conscious (Oberbewusstsein), as our normal waking state, and the subconscious (Unterbewusstsein), as including unattended sensational impressions, he evidently has forgotten the studies of Heymans and others on the inhibition of sensations. His theoretical differentiation between waking and sleeping consciousness (Wachpsyche and Schlafpsyche) lacks the accuracy of scientific as well as philosophic foundation; yet in terms of this differentiation he presents his clinical views and experiences.

He defends hypnosis against the charge that it can weaken the patient's will (p. 34), yet inconsistently admits that the will during hypnosis is set aside (p. 35) and that the patient in a somnolent state (p. 41) is led passively by the hypnotist (p. 43).

Notwithstanding these failings, the little volume should be read by every psychiatrist, albeit critically.

**Anus, Rectum, Sigmoid Colon: Diagnosis and Treatment.** By Harry E. Bacon, B.Sc., M.D., F.A.C.S., Professor and Head of Department of Proctology, Temple University Medical School and Hospital, Philadelphia, Pa. In Two Volumes. Third edition. Cloth. Price, $30 the set. Pp. 540; 541-1127, with 755 illustrations. J. B. Lippincott Company, 227-231 S. 6th St., Philadelphia 5; Aldine House, 10-13 Bedford St., London, W.C.2; 2083 Guy St., Montreal, 1949.

This is a peerless work by a surgeon of skill and integrity who has drawn from his own vast experience, as well as that of his many friends in the medical profession, to compile a text which is literally an encyclopedia of diseases of the anus, rectum and colon. This work consists of two volumes of 29 chapters and 1,127 pages. The work is profoundly written and beautifully illustrated with many color plates, and the author and subject indexes would answer the need of anyone requiring information on diseases of the colon. The volumes have been organized sedulously, are beautifully printed and easily read.

No condition is treated lightly because of its relative unimportance. All material has been brought up to date, and the book has been revised entirely.

This work is recommended to all physicians who are interested in diseases of the colon and also to the undergraduate and postgraduate student of medicine.

# Queries and Minor Notes

THE ANSWERS HERE PUBLISHED HAVE BEEN PREPARED BY COMPETENT AUTHORITIES. THEY DO NOT, HOWEVER, REPRESENT THE OPINIONS OF ANY OFFICIAL BODIES UNLESS SPECIFICALLY STATED IN THE REPLY. ANONYMOUS COMMUNICATIONS AND QUERIES ON POSTAL CARDS WILL NOT BE NOTICED. EVERY LETTER MUST CONTAIN THE WRITER'S NAME AND ADDRESS, BUT THESE WILL BE OMITTED ON REQUEST.

## TRACK WORK AND A BOY'S HEART

*To the Editor:*—I have always thought that track and crew were too strenuous on a boy's heart and now my boy aged 12 is anxious to do track work. Am I right or wrong? He ran 1 mile in seven and one-half minutes recently.

George A. Bahhe, M.D., Oakland, Calif.

ANSWER.—An official statement of the Committee on the Role of Exercise in Physical Fitness states that "a normal healthy child cannot do himself permanent organic injury by physical exertion." However, the advisability of specialization in distance events by a boy aged 12 is open to question. Track events for youth of the prepubescent age group may well be confined to those of short duration, such as the 40, 50 and 60 yard dashes. It has also been widely recommended that competition for youths of this maturity level be limited to a few invitational and informal play-day events, in which participants are carefully classified on the basis of one of the formulas available for the purpose; e. g., age-height-weight determinations. Ordinarily, fatigue and its associated distress act as a "safety valve" in preventing overstrain and cause a child to slow down or stop activity before the physiologic limit or the ultimate capacity of the organs involved is reached. However, the emotional stimulus which is often associated with a highly competitive situation may result in carrying the activity past healthful fatigue to a stage of harmful exhaustion. When track events for the younger age groups are confined to those demanding limited periods of sustained effort rather than long trials of endurance this possibility is reduced if not eliminated. Determination of physiologic soundness by medical examination should, of course, be a requisite to participation in strenuous activity, and it should be kept in mind that some children react unfavorably to exercise and vary in their ability to benefit from it.

## JUNGLE GYMS

*To the Editor:*—Our school system is about to install some jungle gyms for the children in the schoolyards. The question has been brought to me, whether it is safer to have beach sand which will not pack for the base or a firm base such as concrete or asphalt. I believe that there will be fewer sprains and fractures from falling if the base is firm and not uneven and shifty, as it would be with sand.

William F. Mahoney, M.D., Saco, Maine.

ANSWER.—The answer to this question depends somewhat on the kind of maintenance available. A properly kept up pit beneath apparatus from which there is possibility of falling offers some protection for children. Unless the pits can be kept filled and properly leveled, they may be more of a hazard than a safeguard. Recommendations on care of apparatus and facilities include the following item under care of gymnasium frames, bars and rings: "Pits beneath apparatus should be filled with sand and/or shavings, which should be kept loose and comparatively level." The construction of the jungle gym and castle tower makes the possibility of falls to the ground from this type of apparatus less likely than from rings or horizontal bars. In many situations a smooth asphalt surface under the jungle gym or castle tower will prove the best practical solution. Where there is adequate custodial service to insure continual top-grade upkeep, sand pits will have considerable protective value.

## DICUMAROL® TOXICITY

*To the Editor:*—The accepted method for treatment of toxicity due to dicumarol® includes transfusions of plasma and/or whole blood, preferably the latter. In cases with gross hematuria as a sign of toxicity, how much danger is there of a lower nephron nephrosis type of transfusion reaction to whole blood with subsequent development of anuria? Does the toxic hematuria predispose a patient to this type of transfusion reaction?

Edward W. Bixby Jr., M.D., Wilkes-Barre, Pa.

ANSWER.—Hematuria as a result of toxicity due to dicumarol® is probably caused by glomerular damage. Lower nephron nephrosis is the result of a transfusion reaction and is a separate process. There is no reason why transfusions in persons with hematuria due to dicumarol® should be particularly likely to result in lower nephron nephrosis.

## PHARMACOLOGIC PROPERTIES OF HOPS

*To the Editor:*—An Italian woman aged 70 soaked 1 pound (0.5 Kg.) of hops in water for three days, then boiled them and drained off the resultant liquid into a bottle. In the belief that this liquid had medicinal qualities she drank about 4 fluidounces (110 cc.) in one dose. Twenty minutes later she felt sick; the condition became progressively worse, and two hours later she called me. I found the woman in a state of collapse; irritable, apprehensive, with rapid respiration, pulse rate 90 per minute, heart sounds regular but of poor muscular quality, lungs clear, blood pressure 95 systolic and 65 diastolic and the skin dry. The pupils were widely dilated and did not react to light. She complained of heat and dryness of mouth and throat, and thirst. She had frequent desire to urinate but was unable to do so. The picture simulated belladonna poisoning. I gave her an emetic, and she vomited three or four times. Then I gave her clysis of 5 per cent dextrose in isotonic sodium chloride solution. She had to be catheterized six hours later. She spent a restless night, but the following morning her pupils reacted to light, the bladder voided freely and she made a full recovery. What is the nature of the alkaloid in hops? Is it similar to belladonna?

Peter Vitulli, M.D., Brooklyn.

ANSWER.—Doubt exists as to whether hops contain an alkaloid. Power, Tatin and Rogerson reported finding a trace of alkaloid in 1913, but Just and Fink in 1936 failed to prove the presence of an alkaloid in hops after extensive experiments based on the alkaloid solubility in dilute acids, extraction from alkaline solutions with organic solvents, precipitation and turbidity tests and the stability of alkaloids during the methods of extraction employed. They concluded that the physiologic action of hops cannot therefore be referred to the presence of alkaloids. The active principles of hops are referred to as lupulin, and contain, among other things, two bitter acids (alpha and beta lupulinic acids) which have a stimulant effect on the respiratory and vagus centers followed by a depressant effect. Lupulin contains another constituent which is insoluble in water, but which is a strong cardiac poison. The presence of a tannin has been claimed by some but has been repeatedly denied by others.

Hops have been ascribed the therapeutic properties of sedation and hypnosis. It was once the practice to stuff pillows with them because it was believed such a pillow would induce sleep. The sedative and hypnotic properties are due primarily to the bitter acids. The pharmacologic properties vary with the different varieties of hops. Hops also contain arsenic and copper derived from the soil, but the quantities are too small to be harmful and are largely eliminated in the brewing process. Lupulone (the beta form of the bitter acid) is said to have allergenic properties, and it is believed that the addition of some substance in the brewing process completely inhibits its activity.

Reports of a similar case of poisoning from hops have not been found in the literature, nor is there any indication of the presence naturally of a toxic agent in large enough quantities to cause such alarming symptoms. Perhaps this incident can best be ascribed to coincidence or gross contamination of the hops; for instance, had the woman gathered the hops herself, she might have inadvertently included a stalk or leaf of the familiar and plentiful jimson weed (stramonium), which would produce symptoms similar to the ones described by reason of its content of belladonna alkaloid.

## PROCAINE USED INTRAVENOUSLY

*To the Editor:*—I have just heard of a therapeutic procedure which seems to me highly irrational and wish to learn the truth concerning it. A physician attending a patient who was hospitalized for coronary thrombosis and returned home in a convalescent state was asked for something to relieve severe pains in the left arm and shoulder. Morphine is not well tolerated by the patient, and other drugs such as meperidine (demerol®) gave only partial relief. So the physician ordered intravenous injections of procaine (novocaine®), and these were given into a jugular vein. Is there any rational and safe basis for such therapy?

M.D., Maryland.

ANSWER.—Although the value of intravenously given procaine in the relief of pain, treatment of serum sickness and correction or prevention of cardiac arrhythmias due to cyclopropane anesthesia appears established, the question of its safety when given by this route is debatable. Allen and Sufford (*Anesth. & Analg.* 26: 133, 1947) have reported the use of large quantities of procaine intravenously (10 to 20 Gm. daily) without untoward effects and with the production of satisfactory analgesia and anesthesia. Graubard, Robertazzi and Peterson (*New York State J. Med.* 47: 2187, 1947) have pointed out that the toxicity of procaine is one of the main considerations in its intravenous use. The toxicity appears to be dependent more on the concentration injected than on the total amount, because of the rapid metabolism of procaine.

Although the principal toxic action of procaine used intravenously is stimulation of the central nervous system (similar to that of cocaine) with production of convulsions, the cardiac effects cannot be ignored. Burstein (*Anesthesiology* 1:167, 1940;

7:2 and 113, 1946) has shown that procaine reduces the irritability of the myocardium, interferes with conduction in the bundle of His and prolongs the refractory period of the muscle. Wilburn and Uhley (correspondence, THE JOURNAL, p. 449, Oct. 9, 1948) have cautioned against the intravenous use of procaine in patients with inflammatory or degenerative cardiac lesions.

Although procaine might prove effective in combating pain incident to coronary thrombosis, it might also depress the heart and produce serious results. Giving the drug into the jugular vein would tend to permit a higher concentration to reach the right side of the heart, a factor which might be important, depending on the site of the infarction. Not all the cardiac actions of procaine can be considered detrimental in cases of coronary thrombosis. The slowing of conduction time and prolongation of the refractory period could be beneficial, but this action involves a mechanism similar to that of quinidine and not of digitalis. Furthermore, if digitalis is given to a patient receiving procaine intravenously, the toxicity of the digitalis may be increased.

## ESTIMATION OF BASAL METABOLIC RATE

**To the Editor:**—Is the method of estimating the basal metabolic rate by an index using respiratory and pulse rates reliable?

M. M. Young, M.D., Pleasant Hill, Tenn.

ANSWER.—Several formulas have been suggested for estimation of the basal metabolic rate employing the pulse rate, pulse pressure and respiratory rate, separately or in various combinations. None of these is recommended, because: (1) any of these methods constitutes only a gross estimate, usually not accurate within 20 per cent, although usually indicating whether the rate is high, probably normal or low; (2) the estimate of a trained clinician is usually more accurate, based as it is on the observations mentioned plus (*a*) perhaps more significant points in the history and physical examination and often, certain laboratory data (differential white blood cell count, serum protein-bound iodine and blood cholesterol, and (*b*) evaluation of certain factors which may greatly alter pulse rate, pulse pressure and respiratory rate (nervous influences, psychic factors, fever, respiratory and circulatory disorders).

Even when the basal metabolic rate is measured by the most accurate known method (calculation of oxygen consumption), evaluation by an experienced physician is necessary to determine the significance of the resultant figure.

## CANCER OF THE BREAST

**To the Editor:**—I have had difficulty locating recent references to the postoperative treatment of carcinoma of the breast in a woman who is menstruating. How can metastasis be prevented? Are roentgen rays valuable? How should they be used? Should sex hormones be employed? If so, how?

M.D., Illinois.

ANSWER.—The prevention of metastasis in postoperative cases of carcinoma of the breast is theoretically possible with irradiation. Roentgen rays cause death of cancer cells and fibrotic reaction, which entraps cancer cells and prevents their spread. There is a difference of opinion concerning technics of roentgen therapy. Some do not use it after radical mastectomy; some use it when the pathologist reports involvement of axillary nodes; and some use it routinely after operation. You should consult a radiologist in your city for the particular treatment in your case. As far as is known, castration by any method and sex hormone therapy do not prevent metastasis; they are used as palliative treatment after metastasis has occurred.

## HYPERTENSION AND TACHYCARDIA

**To the Editor:**—What is the cause of a high cardiac rate, 118 per minute with normal basal metabolic rate in a formerly hyperthyroid patient? The patient now also has hypertension (systolic pressure 188 and diastolic 166).

M.D., New York.

ANSWER.—The coexistence of hypertension and tachycardia makes one think at once of the possibility of a pheochromocytoma with excessive secretion of the adrenals. Generally in such cases there is an increase in the basal metabolic rate too. At least, this diagnosis should be considered further and tested, for example, by the use of piperidylmethyl benzodioxane. It is, however, important to rule out an abnormal heart rhythm. Therefore, electrocardiographic study is in order. Nervousness per se would be an extremely rare cause for constant tachycardia in hypertension. Essential hypertension does not carry with it a fast heart rate. It would be of some importance to know the age of the patient and the constancy of this heart rate.

## MENSTRUATION TWICE A MONTH

**To the Editor:**—A girl 16 years old menstruates twice each month for four to five days; 4 to 5 pads are used during the first three days. I am giving her vitamin E and calcium. What else would you suggest?

J. O. Helm, M.D., New Florence, Mo.

ANSWER.—This patient deserves endocrinologic study. A pelvic examination should be made to rule out pelvic pathologic changes. This can frequently be done, without appreciably disturbing the hymen, with a one finger vaginal examination, a rectal examination and a rectovaginal examination. A narrow Pederson speculum provides adequate access to the cervix.

Perhaps there is an inadequate amount of iodine in her drinking water. Lugol's solution might be administered for a brief period. This should be followed with iodized table salt which will provide adequate amounts of iodine. A daily record of the basal body temperature and of the morning pulse rate should be kept.

Even if the basal metabolic rate and blood cholesterol are at normal levels, small doses of thyroid may be given—starting with ½ grain and increasing by ½ grain doses. At least three or four weeks should elapse before increases and the morning pulse rate, before the patient's arising, must not exceed 76 or 80. This regimen and adequate amounts of protein and vitamin often will regulate the menstrual cycle. Obese patients should reduce their weight.

Many of these patients have either an anovulatory cycle or infrequent ovulations. A study of ovulation can be obtained from suction biopsy of the endometrium, which is best done during the first hour or two of menstruation. Estrogens and androgens, in general, do not serve any useful purpose, except where the patient is bleeding profusely and not able to keep the blood cell count up, estrogen may be used to stop ovulation for a period long enough to get the blood up to normal levels.

While many of these patients "straighten out" in later life, others do not, and they eventually may show signs of sterility.

## IS EPILEPSY HEREDITARY?

**To the Editor:**—A woman, 34 years old, wishes to marry, but she has a younger sister who has epilepsy. She becomes depressed at times, usually during her menses, but has not had any sign of epilepsy. Would her children have epilepsy?

M.D., California.

ANSWER.—Epilepsy per se is not inherited, but a predisposition to seizures may be. This is a recessive mendelian trait. The degree of predisposition varies for each person. If the sister's epilepsy is acquired, if this is the only instance of epilepsy or migraine among the relatives, if the onset of seizures occurred in later years and if she has a normal intelligence, the development of epilepsy is not likely in the prospective bride. There would be even less danger of epilepsy in the children if the groom is free of a predisposition to seizures. More specific information might be gained from electroencephalograms of the sister and her fiancé. This subject is discussed by W. G. Lennox in the book "Science and Seizures" (New York, Harper & Brothers, 1946) and in his article "Marriage and Children for Epileptics" (*Human Fertil.* **10**:97-106 [Dec. 15] 1945).

## ALOPECIA TOTALIS

**To the Editor:**—A patient aged 21 years and weighing 200 pounds (91 Kg.), the mother of three children, has had bald spots on her head since she was 5 years of age. Six months ago she had a fair amount of hair, but it began to fall out. There was no illness or nervous shock. Now her hair, as well as her eyebrows and eyelashes, is entirely gone. Dandruff is absent, and her general health is good. Please advise as to the best treatment in this case.

A. A. Skemp, M.D., La Crosse, Wis.

ANSWER.—This patient apparently had alopecia areata which progressed to alopecia totalis. There is no specific treatment for this disease, nor is there a specific cause, although in some cases there seems to be a link with the emotions. Endocrinologic abnormalities, foci of infection and nutritional disturbances long have been suspected but never established as causative factors. Psychotherapy is useful in some cases, and in many cases stimulating measures are sometimes effective. Erythematous doses of ultraviolet rays, an ointment containing histamine or ammoniated mercury, massage and vasodilating agents, such as nicotinic acid, are the measures used most frequently. In the majority of cases of alopecia areata new hairs do appear in the bald patches, but in cases of total alopecia permanent regrowth occurs in only about 3 per cent of the cases.

## PENICILLIN DESENSITIZATION

*To the Editor:*—A patient, after receiving injections of protein penicillin in sesame oil, 1 cc. daily for about one week, had hives and vasomotor rhinitis, each of which persisted for about ten days. During this period temporary relief was obtained with diphenhydramine hydrochloride. Is it desirable to desensitize the patient in order that at some future date penicillin may again be administered? Also, please give details of testing for sensitivity to penicillin, sesame oil and procaine in this patient. Undoubtedly the allergic reaction was due to the penicillin, but the other two possibilities probably must be considered. Assuming that sensitivity to one of the three items is shown by tests, recommend the best method of desensitizing.

M.D., Washington.

ANSWER.—In ordinary circumstances desensitization to penicillin is not practical. In view of the extensive use of penicillin, reactions have been relatively infrequent and mild. The procedure for desensitization to penicillin is empiric, and a standard initial dose or incremental doses cannot be prescribed since the patient's reaction cannot be anticipated at the beginning of the desensitization program. One must start with small arbitrarily determined quantities of penicillin to be followed with small incremental doses more or less determined by the patient's reaction to the previous dose. Hospitalization, therefore, is almost imperative for the desensitization of patients who have severe reactions to small quantities of penicillin. The empiric nature of the desensitizing procedure is well illustrated by S. M. Peck (J. A. M. A. **134**: 1546 [Aug. 30] 1947) and O'Donovan (*Lancet* **2**: 444 [Sept.] 1946).

Some penicillin-sensitive patients may react mildly or not at all to subsequent penicillin therapy. Penicillin-sensitive patients can receive susequent penicillin therapy if necessary by starting with small doses and using the antihistaminics and sympathomimetic drugs accordingly.

Sensitivity to penicillin can be determined by the intradermal injection of 2,000 units of the medication in 0.1 cc. of isotonic sodium chloride solution. The reading should be made after twenty-four and forty-eight hour intervals, since the reaction may often be delayed. Generalized reactions to depot penicillin have been shown to be primarily due to the penicillin and not the sesame oil or procaine components.

Penicillin desensitization may be indicated in penicillin-sensitive persons who are constantly engaged in the handling of this medicament and in patients who have had severe reactions to penicillin and who will require penicillin therapy in the immediate future, e. g., in surgical treatment and chronic infections (bronchiectasis).

## PAROXYSMAL AURICULAR TACHYCARDIA

*To the Editor:*—Have there been any recent developments in the etiologic basis and treatment of paroxysmal auricular tachycardia?

Harry R. Deane, M.D., St. Petersburg, Fla.

ANSWER.—There has been nothing new. Some source of sensitization should always be looked for and can occasionally be found. Many cases are migraine equivalents, and a family history of migraine or paroxysmal tachycardia can often be elicited. Even if a source is not found, histamine desensitization may be successful. The history may also elicit some gastrointestinal disturbance other than allergy. Fatigue, overwork, overexertion, tobacco and liquor should also be considered.

Treatment should include a careful search for some etiologic factor. Pressure over the carotid sinus will usually stop the attack at once. In some cases in which this is not successful, pressure on the eyeball will cause a similar reflex. Syrup of ipecac is effective. It may induce emesis, but that is not a deterrent. Quinidine sulfate may be administered orally if the attacks persist. It should be given in divided doses of 3 grains (0.2 Gm.) every two hours for six to eight doses. Any idiosyncrasy to the drug should be apparent after the first dose, and administration of the drug can be stopped.

Acetylbetamethylcholine may be used carefully, but it may cause disturbing symptoms. It can be given in doses of ⅛ to ⅔ grain (10 to 40 mg.) intramuscularly. A constrictor should always be applied about the site of the injection. This can be released at intervals, allowing a slow absorption, or absorption can be terminated by maintaining constriction. Atropin 1/100 grain (0.6 mg.) should be kept at hand for instant use. Bromides or barbiturates may be given and may aid in the effectiveness of the simpler measures. Morphine should not be used in recurring attacks because of the danger of habit formation. Neostigmine 1/100 grain (0.4 mg.) has been reported of value.

There will be some cases involving some underlying cardiac pathologic change, such as an old rheumatic heart disease. In some of these digitalis may be used. Digitalis may induce a fibrillation, which will rarely become permanent.

## POISON IVY

*To the Editor:*—I have seen several patients with dermatitis venenata due to poison ivy. A mild acute stage developed into a chronic skin condition with occasional small patches or lines resembling acute exacerbations with vesiculation. All these patients are young adults, and superficially—if this impression is permissible—appear to be quite normal. Treatment has been attempted with lotions made up of calamine, sugar of lead, and injections of aqueous and of oily suspensions of the allergenic principle. Antihistaminics were tried but were not effective. Would sodium thiosulfate be of value as a detoxifying agent, either topically or intravenously? Could it be used in children aged 8 to 12? Are ultraviolet rays of value, with the water-cooled lamp and pressure?

R. J. Kent, M.D., Savannah, N. Y.

ANSWER.—The best way to prevent an attack of ivy dermatitis is to avoid exposure to the plant. Shelmire has produced desensitization by topical applications of the active principle of the plant using increasing doses at intervals over a long period of time. Some workers regard autohemotherapy as a useful method of treatment and desensitization, and some still regard intravenously administered sodium thiosulfate with favor in doses of 1 Gm. for adults and half that amount for children. The use of a water-cooled ultraviolet lamp is not likely to be effective in desensitization.

## FUNGOUS INFECTIONS AND FOOT BATHS

*To the Editor:*—What is the value of sodium thiosulfate solution in foot baths for the prevention of fungous infections at such places as showers in gymnasiums and of swimming pools? Would the use of one of the newer foot powders containing undecylenic acid be of more value in preventing fungous infection of the foot among the members of a high school athletic team?

T. Ewing Thompson Jr., M.D., Pittsburgh, Pa.

ANSWER.—The use of foot baths with a solution of sodium thiosulfate to prevent infection of the feet with fungus is generally held to be inadequate and of doubtful value even when the feet are immersed for long periods. Better results are obtained by drying the feet thoroughly after showering or swimming and then applying a foot powder, such as one of the newer powders mentioned.

## METHIONINE

*To the Editor:*—What are the dangers, if any, of prolonged administration of methionine over several months of say 2 Gm. daily and a like amount of choline chloride? My concern is with a patient who has had hepatitis with some liver damage. What would be the warning indications to discontinue medication?

Joe C. Rode, M.D., Galveston, Texas.

ANSWER.—Methionine and choline occur in considerable quantities in a variety of foods. They have been administered orally in high dosage for periods extending into many months without evidence of harmful effects. Choline given orally in excessive amounts may produce mild symptoms of parasympathetic stimulation, but the dosage is much greater than 2 Gm. daily. Methionine given in conjunction with an adequate diet has not been reported to produce any acute or chronic toxic effects in doses up to as high as 5 Gm. per day.

## INFECTIOUS MONONUCLEOSIS

*To the Editor:*—An 11 year old boy has had infectious mononucleosis for three months. This diagnosis has been confirmed by heterophil antibody agglutinations in two different laboratories and by white blood cell counts. His symptoms are malaise, lassitude, easy fatigability and persistent low grade fever (around 100 F.). About one month ago aureomycin was given in adequate doses (100 mg. per kilogram of body weight) for four days without response. Are there any suggestions as to therapy? May one with any assurance assure the family that recovery will take place in another three, six or twelve months? Are there any authenticated cases in which symptoms were present for one, two or three years?

M.D., Tennessee.

ANSWER.—Specific treatment is not known (we assume that the diagnosis is correct for mononucleosis). A few cases have been reported of patients responding to treatment with aureomycin, but this has not as yet been definitely established. Many clinicians believe that the best treatment is the same as that of virus hepatitis because the underlying pathologic changes of the liver are essentially identical. The eventual prognosis is almost entirely good, and few patients have persistent symptoms for more than six months. In rare cases, however, symptoms may persist for a year or even longer.

## CORRECTION

**Diethylstilbestrol in Endometriosis.**—In the answer to the query of this title in THE JOURNAL, August 27, 1949, page 1375, second paragraph, fourth line, the word "menstruating" should have read "ovulating."